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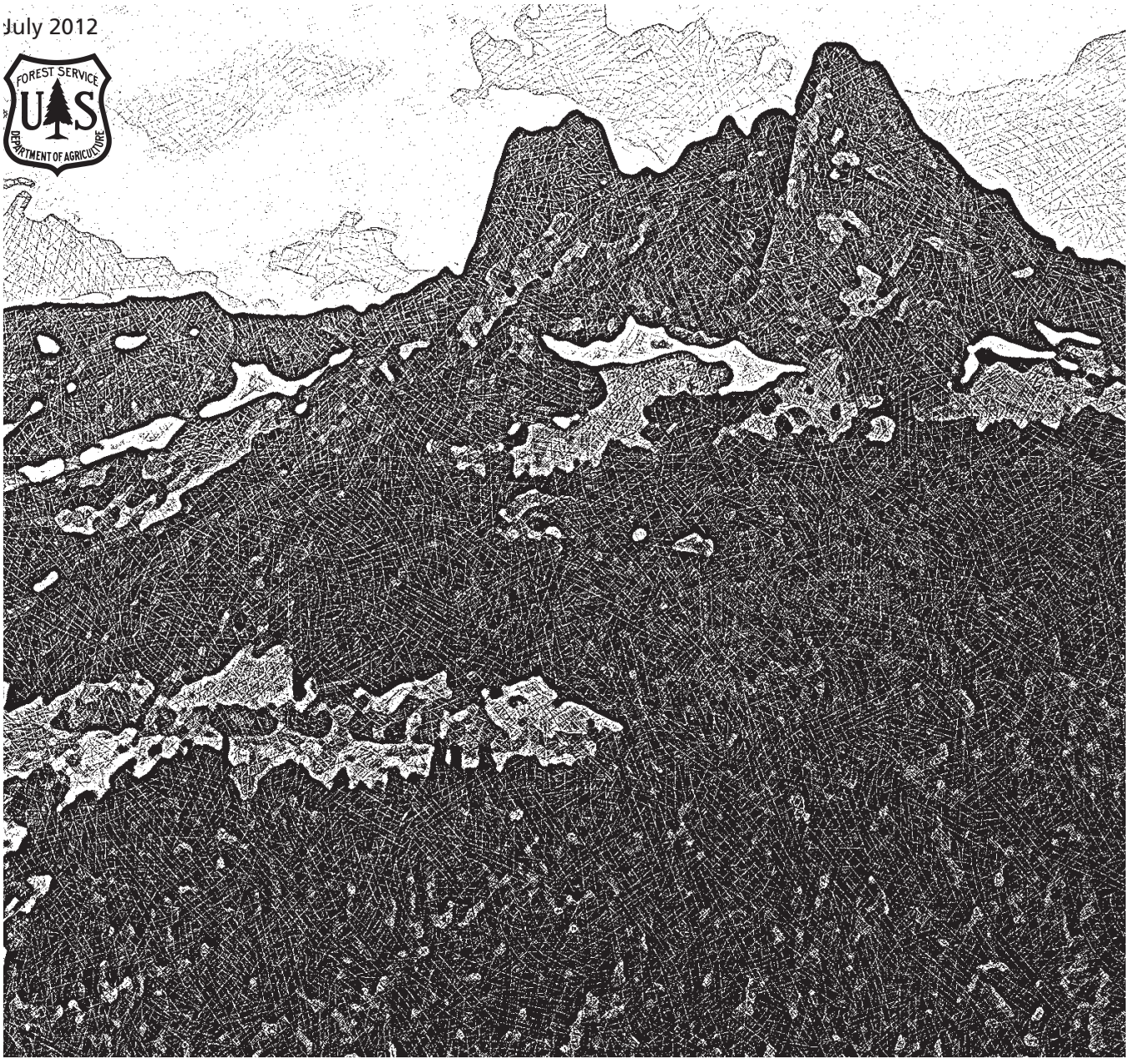
Annual Report on the Okanogan Land and Resource Management Plan

Implementation and Monitoring for Fiscal Year 2010

July 2012



Contents

Forest Plan Decisions 1
Monitoring Methods 2
Summary of Recommendations 2
Summary Table of Items Reported in FY 2010 3
Scenery Management 9
Physical, Social and Managerial Setting for Recreation Opportunities. 11
User (visitor) Needs and Expectations 12
ORV Use Rates and Patterns 12
Physical, Social and Managerial Setting for Wilderness Opportunities 13
Effects of Activities on Attributes for Potential Classification of River Segments Eligible for Wild and Scenic River Designation 15
Mule Deer Management as an Indicator for Deer Winter Range 16
Mule Deer population levels 16
Primary Cavity Excavators 17
Lynx 17
Lynx Population Trends 18
Ruffed Grouse Habitat Management 18
Ruffed Grouse Population Changes 19
Grizzly Bear Habitat Management 19
Bighorn Sheep 20
Mountain Goat 21
Northern Spotted Owl 21
Pileated Woodpecker, Pine Marten, Three-toed Woodpecker, Barred Owl 22
Raptor Nests 22
Status of Aquatic Management Indicator Species 23
Watershed Condition 24
Range Heath 33
Allotment Management Plans 35
Riparian Watershed Implementation Monitoring 36
Road Miles & Operational Status 38
Actual annual Wildfire occurrence frequency by statistical cause. 40
Heritage Resource Site Protection 40
Heritage Resource Site Preservation 42
American Indian Relations 43
Management of competing and unwanted vegetation 45
FOREST PLAN AMENDMENTS 47
Schedule of Proposed Actions 51
LIST OF PREPARERS 52

Introduction

Monitoring is done to measure progress in Forest Plan implementation. It consists of gathering data, making observations, and collecting and disclosing information. Monitoring is also the means to determine how well objectives of the Plan are being met, and how appropriate the management Standards and Guidelines are for meeting the Forest's outputs, and protecting the environment. Monitoring is used to determine how well assumptions used in development of the Forest Plan reflect actual conditions.

Monitoring and evaluation may lead to a change in practices or provide a basis for adjustments, amendments, or Plan revision. Monitoring is intended to keep the Forest Plan dynamic and responsive to change. Upon evaluation of the data and information, determinations are made as to whether or not planned conditions or results are being attained and when they are within Plan direction. When a situation is identified as being outside the limits of acceptable variability, changes may need to occur.

This report covers Forest Plan Monitoring and Evaluation for the Okanogan National Forest for Fiscal Year 2010. Monitoring and evaluation processes are laid out in the amended Okanogan National Forest Land Management Plan (Forest Plan). Under this process, reports for each individual monitoring item by various resource specialists were completed. The Okanogan Forest continues to alter its' monitoring reporting strategy in recognition of the Forest Plan revision effort and the administrative merger with the Wenatchee National Forest. In addition, many items are being reevaluated in terms of Forest Plan revision and are not being reported this year.

Forest Plan Decisions

The amended Forest Plan is a set of decisions that guide our management of the Forest. Taken broadly, it contains three types of decisions:

Goals, Objectives, and Desired Future Conditions provide general direction regarding where we should be headed as we put the Plan into practice.

Standards tell us how to put the Plan into practice, or give us conditions we must meet while we implement the Plan.

Land Allocation by management areas (MAs) as described in the Forest Plan and displayed on the Forest Plan Map, in a sense "zone" the Forest into different types of areas that are suitable and available for different types of land management and resource production.

Monitoring is gathering information and observing management activities. Forest Plan monitoring is organized into three levels:

Implementation monitoring determines whether goals, objectives, standards and management practices are implemented as detailed in the amended Forest Plan, asking ourselves, "Did we do what we said we were going to do?"

Effectiveness monitoring determines whether management practices, as designed and executed, are effective in meeting amended Forest Plan standards, goals, and objectives. The question being asked, "Did the management practice or activity do what was intended?"

Validation monitoring is used to determine whether the data, assumptions and coefficients used in the development of the amended Forest Plan are covered. The question being asked, "Is there a better way to meet the Forest Plan's goals and objectives?"

Monitoring Methods

The amended Forest Plan defines a process that was designed to monitor implementation of the decisions above. Are we doing what the Plan envisioned? Are we seeing the effects and outputs the Plan predicted? Are the standards working? Do we need to adjust practices to meet standards? Does the monitoring process need to be adjusted?

In addition to these monitoring methods, we also have monitoring procedures for timber sales, grazing allotments, fisheries, water quality, wildlife, and project effects. The results of these other types of monitoring are considered in this report.

Summary of Recommendations

The following table illustrates the recommended action for each monitoring item reported for Fiscal Year 2010.

Results okay; continue monitoring

The results for these monitoring items are within the Threshold of Variability listed in Chapter V of the Forest Plan, or more than one year's data is needed to evaluate the results. Several years' data is generally necessary to evaluate questions of the effectiveness or validity of the Plan. Studies are being initiated to provide the baseline data and inventories necessary to answer these questions.

Change Management Practices

Areas where the results exceeded the Threshold of Variability for a particular item in Chapter V, and an evaluation of the situation indicated the need to change practices to comply with the Forest Plan.

Further Evaluation/Determine Action

Results may or may not have exceeded the Threshold of Variability, but additional information is needed to better identify the cause of the concern and to determine future actions.

Propose Forest Plan Amendment

Areas where results were inconsistent with the Forest Plan or Forest Plan direction was not clear. The action is either changing or clarifying the Forest Plan through the amendment or revision process. Non-significant amendments may be made by the Forest Supervisor. Significant amendments require Regional Forester approval.

Other Recommendations

Results suggest issuing action other than that specified by the above four options. Comments directing action were by resource specialists.

Summary Table of Items Reported in FY 2010

Monitoring Items	Results Okay; Continue Monitoring	Change Management Practices	Further Evaluation Needed	Propose Forest Plan Amendment	Other Recommendations
1. Scenery Management	●				Continue to monitor as scheduled, projects in special places and areas of High to Moderate scenic concern. Continue working with the Department of Transportation and permittees to minimize signs and structures and ensure aesthetically pleasing structures, safety features and hazard removal along scenic travel corridors. Continue monitoring vegetation and structures along North Cascades Scenic Highway 20 to maintain the highest possible scenic quality by designing all activities to retain natural appearing scenery. Continue to monitor the Loup Loup Highway 20 viewshed and continue working with Loup Loup Ski Company to improve architectural style, signs, landscaping, and color scheme.
2. Physical, Social and Managerial Setting for recreation Opportunities	●				No action needed. Monitoring indicates management direction is being achieved. Results and effects meet the standards prescribed. Continue current course.

Monitoring Items	Results Okay; Continue Monitoring	Change Management Practices	Further Evaluation Needed	Propose Forest Plan Amendment	Other Recommendations
3. User (visitor) Needs and Expectations	●				No action needed. Monitoring indicates management direction is being achieved. Results and effects meet he standards prescribed. Continue current course. The emphasis needs to be on providing safe, sanitary facilities and quality interpretive and educational opportunities.
4. ORV Use Rates and Patterns	●				Complete Travel Management Planning and implement the decision using the nationally prescribed Motor Vehicle Use Map. Monitor effectiveness and adapt management strategy as needed.
5. Physical, Social and Managerial Settings for Wilderness Opportunities	●				Continue work on the 20 action items in the "Wilderness Recreation, Stock and Outfitter Use Strategy and Action Plan" (April 2000) to reduce recreation impacts, and especially stock related impacts, in Wilderness. Complete a site inventory for the entire Pasayten Wilderness..
7. Effects of Activities on Attributes for Potential Classification of River Segments Recommended as Suitable for Designation as Part of Wild and Scenic River system or Recommended for Further Study	●				No action needed. Monitoring indicated management direction is being achieved.
8. Mule Deer Indicator for Deer Winter Range	●				Reliable, consistent vegetation information, including structure components, is needed to provide more conclusive analysis of deer habitat conditions.

Monitoring Items	Results Okay; Continue Monitoring	Change Management Practices	Further Evaluation Needed	Propose Forest Plan Amendment	Other Recommendations
9. Mule Deer Population Levels	●				No action needed.
11. Primary Cavity Excavators	●				Establish monitoring for ongoing vegetation management projects
14. Lynx		●			Drop the monitoring item since it only applies to portion of lynx habitat in MA 12. The LCAS and CA address lynx habitat management more thoroughly until the Forest Plan revision is completed and information from the LCAS in incorporated into the Forest Plan. The LCAS is in the revision process. A contract to update the assessment with all peer-reviewed literature published since 2000 was initiated in late 2010 and expected to be completed in 2011. In 2011/12 the conservation strategy will be revised to update conservation issues using the most current science.
15. Lynx Population Trends	●				Continue monitoring in cooperation with various partners. Trapping in Blackpine Basin will begin in 2011 and continue through 2012.
16. Ruffed Grouse Habitat Management	●				Continue to monitor aspen occurrence and distribution in timber management allocations to detect changes.
17. Ruffed Grouse Population Changes		●			Drop this monitoring item. Not enough information has been gathered in a consistent manner or scheduled fashion over a broad enough area to give any reliable analysis.

Monitoring Items	Results Okay; Continue Monitoring	Change Management Practices	Further Evaluation Needed	Propose Forest Plan Amendment	Other Recommendations
19. Grizzly Bear Habitat Management	●				Continue to complete Biological Assessments and consultation. Continue to work with the North Cascades Grizzly Bear Management Subcommittee to refine guidance addressing grizzly bear habitat issues and habitat.
20. Big Horn Sheep	●				Reliable, consistent GIS based information on current vegetation is needed to be able to provide more conclusive analysis of habitat conditions.
22. Mountain Goat Habitat Capability	●				Continue to monitor habitat capability for mountain goats.
25. Northern Spotted Owl	●				Continue monitoring with partners.
26. and 27. Pileated Woodpecker, Pine Marten, Three-toed Woodpecker and Barred Owl	●				No action needed. Monitoring indicates management direction is being achieved. Results and effects meet the standards prescribed.
29. Raptor Nests	●				Continue with monitoring biological evaluations.
31. Status of Aquatic Management Indicator Species	●				Continue to monitor these populations.
32. Watershed Condition/Aquatic Habitat	●				These parameters can have large year to year variation, making any estimation of trend in condition extremely difficult. Continue to survey streams for riparian and stream channel condition.

Monitoring Items	Results Okay; Continue Monitoring	Change Management Practices	Further Evaluation Needed	Propose Forest Plan Amendment	Other Recommendations
36. Range Heath (changed from Range Condition)	●				Continue to implement utilization monitoring for the active grazing allotments. Continue to adjust grazing strategies to reduce grazing effects on other resources. Changes or modifications to attain Forest Plan objective are made through Term Grazing Permit administration for compliance with utilization standards and guidelines. Where currents actions are not obtaining desired results, make changes through adaptive management. Continue to complete range analysis surveys for NEPA decisions and allotment management plan updates.
38. Allotment Management Plans	●				The same as above. Where currents actions are not obtaining desired results, make changes through adaptive management.
47. Riparian Watershed Implementation Monitoring	●				Results okay; continue monitoring this item.
53. Road Miles & Operational Status	●				Results okay. Continue monitoring. Minimum roads analysis has begun on the Forest and will be completed in 2015. MRA will result in recommendations for future road closure projects. Use best available science to determine road density standards during Plan revision.

Monitoring Items	Results Okay; Continue Monitoring	Change Management Practices	Further Evaluation Needed	Propose Forest Plan Amendment	Other Recommendations
55. Actual Annual Fire Wildfire Occurrence Frequency	●				Results are okay, nothing can be done to influence the rate of natural ignitions. There is still a need to pursue investigations of human fire starts in order to determine cause. The Forest continues to have a need for qualified Fire Investigators.
70. Heritage Resource Site Protection	●				Continue monitoring sites inside project areas. Emphasize site evaluation, especially the evaluation of previously documented cultural resource sites.
71.Historic Site Preservation	●				Continue to perform condition assessments on historic properties and treat sites as needed.
72 .American Indian Relations	●				Results okay; continue monitoring.
73. Invasive Species	●				Evaluate use of any new standards for plan monitoring and implementation as appropriate. Monitor effectiveness of weed free feed/straw regulations and signing that communicates the new regulations to the stock-using public. Monitor the effectiveness of weed free gravel in timber and engineering projects. Establish key/indicator drainages/areas that can be assessed every 3 years to monitor the status of invasive plants treatments and prioritize watersheds for restoration.

Monitoring Item No. 1

Scenery Management

Objective or Purpose: Manage vegetation and facilities that provide views, which are consistent with the stated scenic quality objectives and landscape character goal for each management area.

Type of Monitoring: ■ Implementation ❑ Effectiveness ❑ Validation

Method of Monitoring: Consultation with district and field reviews.

Unit of Measure: Cumulative effects of all resource activities within a viewshed and project site specific in areas with a moderate to high concern for scenic quality and landscape character.

Criteria & Standards: Forest Plan direction, Standards and Guidelines, Forest Service Scenery Management System (USDA Forest Service 1995), and the Visual Management System (USDA Forest Service 1974) National Forest Landscape Management Handbooks.

Frequency Item is Reported: Every 5 years.

Evaluation: The Okanogan-Wenatchee National Forest (NF) landscape architect reviewed projects on the Methow Valley and Tonasket Ranger Districts (RD's) to assess the potential cumulative effects of resource activities on scenery. The following areas are periodically reviewed: Washington Pass Scenic Highway 20 and Loup Loup State Route 20. Scenic resource analyses on these viewsheds indicate that the viewsheds vary from natural appearing to a slightly altered condition on National Forest System Lands. In other viewsheds of high to moderate scenic concern projects are also reviewed.

Washington Pass viewshed is in a natural appearing condition throughout the travel route. Currently, there is a spruce budworm infestation that is very active and changing the landscape character dramatically by turning green trees to brown on a landscape scale throughout the viewshed. This has been occurring over several years. The scale of the disturbance is dominating to the evergreen landscape character. Vegetation management changes throughout the travel route blend well with the natural diversity of landscapes from Early Winters to Rainy Pass. Washington Pass is maintained at a high level of scenery and the sense of place is maintained throughout the corridor with a consistent planning scheme for signs and improving the recreation infrastructure in a rustic Cascadian Architectural style.

Washington Pass Day Use Site was redesigned to improve accessibility, safety and provide new toilets and picnic sites. New recreation facilities that were installed or replaced include four Cascadian Architectural style toilets, accessible picnic sites and accessible trail to the overlook, interpretive information kiosk and rustic metal railing from the parking area to the overlook and along a portion of the hiking trail. The metal railing is non-reflective weathering steel (corten) that flows throughout the site and around the steep overlook and hiking trail. The metal railing replaces the outdated timber railing that didn't meet current safety or accessibility standards and was deteriorating with age. The new facilities blend well into the existing landscape character and reflect a high quality of design and implementation. This recreation project improved both the safety and the aesthetics of the facility and is an enhancement to the Washington Pass viewshed. Overall, the quality of work maintains the sense of place and a high level of aesthetic quality meeting the objectives for scenery and recreation.

In the Loup Loup viewshed there have not been any projects implemented since the last monitoring report in 2005. The viewshed is still remains in a natural to slightly altered appearing condition.

Monitoring at Loup Loup Ski Area continues to ensure improvements and developments meet the rustic Cascadian Architectural style through the choice of building materials, colors and placement on the site to maintain an aesthetically pleasing landscape setting. There have been minor improvements and routine maintenance projects implemented in the Loup Loup Ski Area over the last five years.

Projects Monitored in Other Viewsheds: The Blackpine Lake Campground was redesigned to improve the recreation infrastructure, provide a higher level of accessibility, improve overall safety, and enhance the camping experience. New facilities included two Cascadian architectural style toilets, fishing and boat docks, and water distribution lines. Improvements were made by redesigning vehicular circulation patterns, and widening and gravelling the roads and campsite parking spurs to reduce dust and safety in the main campground loop.

Campsite parking spurs were lengthened to accommodate trailers and RVs where the site's aesthetics would not be impacted. The day use parking was expanded, and the access road from the turnoff to the day use and boat launch was paved. New, fully accessible walk-in tent campsites will be installed near the day use area and accessible interpretive trail and fishing dock. The docks railings were powder coated a cedar brown to match the decking to fully blend into the lake setting and be non-reflective. The new facilities blend well into the existing landscape character and reflect a high quality of design and implementation. The design was adjusted to save as many large trees as possible to maintain the distinctive landscape character of the large conifers and sense of place for the recreation users. Overall, the quality of work maintains the sense of place and a high level of aesthetic quality, thus meeting the objectives for scenery and recreation.

The implementation of Eightmile Vegetation Management Project in the Eightmile Viewshed was completed between 2008 and 2010. The emphasis was to reduce fuels and thin to enhance large tree growth in the landscape. This benefits long term scenic quality by providing a more stable, sustainable forest. The reduction of fuels reduces the potential for high intensity wildfire. Landscape character changes are seen as a range of thinned out stands of trees to a more open forested canopy character with a mosaic texture change. Large tree character is more evident after removing small highly textured trees surrounding the old ponderosa pines. Prescribed fire treatments still need to be completed. The Eightmile Viewshed is rated as a Sensitivity Level 1; the project met the established visual quality objective of Retention and maintained a quality recreation setting for the numerous developed and dispersed campgrounds located along the travel corridor.

The Tripod Recovery Project was implemented between July 2008 and 2009. The Tripod Fire burned over 175,000 acres, which is partially seen from several travel routes, dispersed and developed recreation trails and camps in the mountain terrain where the fire dominated the landscape. From the surrounding communities of Conconully and Winthrop the project area is not visible and is viewed as a moderately rolling to steeply dissected landform located in numerous stream lined valleys as a backdrop. The landscape appears as a burned landscape with the vegetation fire burn intensities ranging in a mosaic of very low to low to moderate and high severity in the foreground and middleground view from the main recreational travel routes with areas of unburned mosaic patterns intermixed in the landscape. The four viewsheds in the project area are the Chewuch Viewshed, the Middle Salmon-Boulder Viewshed, Methow Valley Viewshed, and the Conconully Viewshed. The Middle Salmon-Boulder is rated a Sensitivity Level 2 Viewshed, Partial Retention VQO. Forest Road 37, Forest Road 42 and Forest Road 4235 to Starvation Mountain have Moderate Visual Significance. Most of the area in the middleground or background is prescribed as Modification and Maximum Modification VQOs with a wildlife habitat emphasis. Generally, these areas are not highly visible from the surrounding designated travel routes and viewsheds or from surrounding communities of Conconully and Winthrop. Due to the distance of viewing and the topography breaks of dissected valleys and ridges to break up the salvage units, the treatments blend into the landscape well and met the Partial Retention to Modification Visual Quality Objectives. The landscape character is mosaic and more open in character with visual evidence of a recent forest fire.

The Two Lakes Vegetation Management Project was implemented; the project area is located around Bonaparte Lake and Lost Lake recreation areas, organizations camps, and summer home sites, there is private land along Bonaparte Valley bottom where residents live full time, and private summer cabins east

and south of Lost Lake. The project area is seen as several dissected valley landforms with several forest roads that loop around the two lakes at various elevations. The project enhanced landscape character by thinning out stands of trees to a more open forested canopy character creating a mosaic texture change. Large tree character is more evident with removal of the surrounding small, highly textured trees. The open views into forest stands serve to highlight the landscape character from the travel routes. The reduction of fuels and thinning to enhance large tree growth in the landscape benefits long term scenic quality by providing a more stable, sustainable forest which is typical of the Okanogan Highlands vegetative character type. The Two Lakes Project maintained a high level of scenic quality, met the Retention VQO and maintained a sense of place for the recreationists and locals who live in the area.

Recommendations:

Continue to monitor projects in special places and areas of High to Moderate scenic concern.

Continue working with the Department of Transportation and permittees to minimize signs and structures and ensure aesthetically pleasing structures, safety features and hazard removal along scenic travel corridors.

Continue monitoring vegetation and structures along North Cascades Scenic Highway 20 to maintain the highest possible scenic quality by designing all activities to retain natural appearing scenery.

Continue to monitor the Loup Loup Highway 20 viewshed.

Continue working with Loup Loup Ski Company to improve architectural style, signs, landscaping, and color scheme.

Monitoring Item No. 2

Physical, Social and Managerial Setting for Recreation Opportunities.

Objective or Purpose: Assure that selected physical and visual attributes described in the ROS User's Guide are being protected from degradation in recreation management emphasis areas.

Type of Monitoring: ■ Implementation ■ Effectiveness ❑ Validation

Method of Monitoring: Project review involving vegetation manipulation, road or trail reconstruction and construction in recreation management emphasis areas.

Unit of Measure: Acres not meeting desired attributes.

Criteria: Forest Plan direction, Standards and Guidelines.

Standards: Was desired physical, social and managerial setting achieved?

Frequency Item is Monitored: Continuous.

Frequency Item is Reported: Every 5 years.

Evaluation: Review of National Environmental Policy Act (NEPA) documents from FY 2006 to FY 2011 indicates that selected physical and visual attributes are being protected from degradation. Any changes are consistent with Recreation Opportunity Spectrum (ROS) direction for the management areas in which the management activities occurred.

Recommended Actions: No action needed. Monitoring indicates management direction is being achieved. Results and effects meet the standards prescribed. Continue current course.

Monitoring Item No. 3

User (visitor) Needs and Expectations

Objective or Purpose: Identify changing needs and expectations.

Type of Monitoring: ❑ Implementation ❑ Effectiveness ■ Validation

Method of Monitoring: Sample field contacts with users in recreation management emphasis areas and review of written and electronic media comments and National Visitor Use Monitoring reports.

Unit of Measure: Number of comments.

Criteria: Forest Plan direction, Standards and Guidelines.

Standards: Do more than 50% of comments over a 5-year period indicate needs of public are not being met?

Frequency Item is Monitored: Continuous.

Frequency Item is Reported: Every 5 years.

Evaluation: Results from the 2010 National Visitor Use Monitoring study for the Okanogan National Forest show that visitors are satisfied with the physical and social setting.

For developed sites, 95% of respondents reported being satisfied with developed facilities; 97% were satisfied with access; 100% were satisfied with the degree of safety they perceived, and 86% were satisfied with services.

In undeveloped areas (referred to as 'General Forest Areas, or GFA's), respondents reported satisfaction levels of 70% with developed facilities, 82 % with access, 69% with services, and 93% satisfaction with perceived safety. Lower scores for developed facilities and services could be a reflection of the intended management of those undeveloped areas (General Forest Areas), where ROS settings are more natural and fewer facilities and services are present. Lower levels of satisfaction were reported in relation to cleanliness of restrooms and either the desire for more or fewer interpretive displays.

Recommended Actions: No action needed. Monitoring indicates management direction is being achieved. Results and effects meet he standards prescribed. Continue current course. The emphasis needs to be on providing safe, sanitary facilities and quality interpretive and educational opportunities.

Monitoring Item No. 4

ORV Use Rates and Patterns

Objective or Purpose: Avoid resource damage and/or conflicts with non-motorized users.

Type of Monitoring: ■ Implementation ■ Effectiveness ❑ Validation

Method of Monitoring: Sample field observations for effects on land and other resources. Sample field contacts with non-motorized users in areas open to ORV use.

Unit of Measure: Acres and/or miles of roads and trail receiving unacceptable impacts. Number of reports of conflict.

Criteria: Forest Plan direction, Standards and Guidelines.

Standards: Is use resulting in acceptable resource impacts? Are numerous reports of conflicts reported?

Frequency Item is Monitored: Continuous throughout heavy use season.

Frequency Item is Reported: Every 5 years.

Evaluation: Results of the 2010 Visitor Use Monitoring Study suggest that the percentage of visitors participating in motorized activities is relatively small (0.3 % OHV Use, 0.2% motorized trail activity, and 0.1% other motorized activity). Although a complete inventory of unauthorized trails has not been conducted, some Forest specialists and members of the public believe that unacceptable resource impacts are occurring as a result of motorized use. This is not unique to this Forest, and is the impetus behind the National Travel Management Rule, which, in 2005 directed all forests to complete a travel management plan to address the effects of 'unmanaged" (generally interpreted as 'motorized') recreation. The Forest is currently engaged in the process of designating where motorized recreation is appropriate, and then closing the remainder of the Forest to cross-country motorized travel.

Conflicts have occurred between snowmobile users and non-motorized winter user groups. This seems to be the most contentious issue currently, although there is ongoing conflict between summer motorized and non-motorized recreationists.

Recommended Actions: Complete the Travel Management Plan and implement it using the nationally prescribed Motor Vehicle Use Map. Monitor effectiveness and adapt management strategy as needed.

Monitoring Item No. 5

Physical, Social and Managerial Setting for Wilderness Opportunities

Objective or Purpose: Assure that wilderness attributes are maintained.

Type of Monitoring: ■ Implementation ■ Effectiveness ❑ Validation

Method of Monitoring: Sample field observation of heavy use areas and travel corridors.

Unit of Measure: Acres not meeting desired attributes.

Criteria: Forest Plan direction, Standards and Guidelines.

Standards: Are wilderness standards and guidelines being met?

Frequency Item is Monitored: Continuous throughout heavy use season.

Frequency Item is Reported: Every 5 years.

Evaluation: For the period FY 2006 through FY 2010, monitoring of sites in the Pasayten and Lake Chelan Sawtooth Wildernesses indicate the following:

Pasayten Wilderness - Standards for Campsite Conditions: Of 390 campsites monitored, 52% of the sites were within 200'of water. It should be noted that distance to water was determined by GIS analysis and that the GIS layers available for water are not always 100% accurate, nor does it reflect slope distance. No sites were monitored in the MA15A (trailless) portion of wilderness. In the MA 15B (Trailed) portion of the wilderness, 27% exceeded barren core area standards; and 37% exceeded exposed roots standards. Results of monitoring 106 sites during the period of 2000 to 2005 showed that 43% exceeded the standard for barren core and 37% exceeded the standard for exposed roots. Comparison of monitoring results in these two time periods could be interpreted as an indication of an improvement in conditions

on the ground over the past five years. However, there is an alternate explanation for the difference in numbers for this round of inventory & monitoring. This inventory was more thorough than previous inventories and thus picked up additional smaller, lightly used sites. It is likely that the improvement in barren core standards being met is a combination of stable to improving conditions on the ground and a more comprehensive inventory which accounts for lesser used sites.

In total, 275 (70%) campsites do not meet Forest Plan standards for at least one indicator (barren core, exposed roots, distance from water), and some sites may not meet the standards for several indicators. However, only 4.6 acres do not meet standards and guidelines when barren core is added together for all sites exceeding Forest Plan standards.

Standards for Social Encounters:

The Okanogan Forest Plan standard for 15B (trailed) is that there will be an 80% probability of no more than 7 encounters daily through all use seasons. Encounter data collected between 2006 and 2011 indicates there was a 1% chance of having more than 7 encounters on a given day. Popular locations where having more than 8 encounters is more likely include: the PCT; Andrews Ck Trail; Remmel Lake Area; Chewuch Trail; Horseshoe Basin Area; Hidden Lakes Trail and area; Buckskin Ridge; and Black Lake. The highest likelihood of more than 7 encounters generally occurs on weekends and holidays in July, August and September but may also occur randomly during the week. There are many factors influencing amount and distribution of use which influences encounters. Weather, fire activity, featuring a particular trail or trip in the media, can cause an obvious increase or decrease at specific in use on a yearly basis on an individual trail.

Separate encounter monitoring was not conducted for MA 15A (trail less), but ranger patrols suggest that the standard of an 80% probability of no more than 1 encounters daily through all use seasons is being met.

Lake Chelan Sawtooth Wilderness - Standards for Campsite Conditions

During this monitoring period (2006-2011), all known/recognizable campsites in the Lake Chelan-Sawtooth Wilderness were inventoried or monitored. 199 campsites were monitored that portion of the Wilderness located within the Okanogan National Forest. 73% of these sites were within 200' of water. It should be noted that distance to water was determined by GIS analysis and that the GIS layers available for water are not always 100% accurate, nor does it reflect slope distance. 184 of the campsites monitored were within MA 15B (Trailed) portion of the Wilderness. Of these, 19% exceeded barren core area standards; and 22% exceeded exposed roots standards. Monitoring information collected from 2000 to 2005 covered 39 campsites, of which 48% exceed barren core area standards and 53% exceeded exposed root standards. This could be interpreted as an improvement in conditions on the ground over the past five years. However, there is an alternate explanation for the difference in numbers for this round of inventory. This inventory was more thorough than previous inventories and thus picked up more lightly used sites with smaller areas. It is likely that the improvement in standards being met is a combination of stable to improving conditions on the ground and a more comprehensive inventory which accounts for lesser used sites.

15 sites were monitored in the MA15A (trail less) portion of wilderness; of these 33% exceeded the standard and guideline for barren core area.

In total, 158 (79%) campsites do not meet the standards and guidelines for least one indicator (barren core, exposed roots, distance to water), and some sites may not meet the standards for more than one indicator. However, only 1.3 acres do not meet standards and guidelines when barren core is added together for all non-compliant sites.

Standards for Social Encounters:

The Okanogan Forest Plan standard for 15B (trailed) is that there will be an 80% probability of no more than 7 encounters daily through all use seasons. Encounter data collected by rangers between 2006 and 2011, indicate there was a 1% chance of having more than 7 encounters on a given day. Popular locations where having more than 8 encounters is more likely include: North Lake, Twisp Pass, Louis Lake, and the Oval Lakes area. The highest likelihood of more than 7 encounters generally occurs on weekends and holidays in July, August and September, but may also occur randomly during the week. There are many factors influencing amount and distribution of use which influences encounters. Weather, fire activity, featuring a particular trail or trip in the media, can cause an obvious increase or decrease at specific in use on a yearly basis on an individual trail.

Separate encounter monitoring was not conducted for MA 15A (trail less), but ranger patrols suggest that the standard of an 80% probability of no more than 1 encounters daily through all use seasons is being met.

Recommended Actions: In April, 2000, a "Wilderness Recreation, Stock and Outfitter Use Strategy and Action Plan" was approved. The objective of this plan is to reduce recreation impacts, and especially stock related impacts, in Wilderness. The plan contains 20 action items, and work is continuing on those items. An EIS for Outfitter Guide use is nearing completion, and will address some of the above issues for both wildernesses. A decision is expected in the first quarter of 2012.

Work to complete a site inventory for the entire Pasayten Wilderness is ongoing.

Monitoring Item No. 7

Effects of Activities on Attributes for Potential Classification of River Segments Eligible for Wild and Scenic River Designation

Objective or Purpose: Assure that attributes for potential classification of river segments eligible for wild and scenic river designation are maintained.

Type of Monitoring: ■ Implementation ■ Effectiveness ❑ Validation

Method of Monitoring: Project reviews involving vegetation manipulation, road or trail reconstruction and construction along suitable river segments.

Unit of Measure: Acres within river corridor not meeting desired attributes.

Criteria: Forest Plan direction, Standards and Guidelines.

Standards: Have activities lowered potential classification of the river segments?

Frequency Item is Monitored: Continuous.

Frequency Item is Reported: Every 5 years.

Evaluation: Review of NEPA documents from FY 2006 to FY 2010 indicates the Outstandingly Remarkable Values for river and creek segments eligible to be included in the National Wild and Scenic River System have been maintained. These segments were determined to be eligible for inclusion in the National Wild and Scenic River System based on their free-flowing characteristics throughout the major portion of the primary use season and because they exhibit at least one outstanding remarkable value. These eligible segments include the following streams: Methow River, Chewuch River, Twisp River, Lost River, Pasayten River, Wolf Creek, Canyon Creek, Granite Creek and Ruby Creek.

Recommended Actions: No action needed. Monitoring indicated management direction is being achieved. Results and effects meet the standards prescribed.

Monitoring Item No. 8

Mule Deer Management as an Indicator for Deer Winter Range

Objective or Purpose: Habitat Management

Type of Monitoring: ■ Implementation ■ Effectiveness ❑ Validation

Method of Monitoring: Verify by field samples. Use Geographic Information System to determined amounts and distribution of thermal and hiding cover on summer range.

Unit of Measure: Habitat effectiveness.

Criteria: Forest Plan direction, Standards and Guidelines

Standards: Is habitat effectiveness more than 20% below management objective?

Frequency Item is Monitored: Every 5 years

Evaluation: Vegetative information in GIS is not adequate or accurate enough to determine deer cover. Deer habitat is analyzed on a project-by-project basis, but no monitoring on the landscape scale has been completed.

Recommended Actions: Reliable, consistent vegetation information, including structure components, is needed to provide more conclusive analysis of deer habitat conditions.

Monitoring Item No. 9

Mule Deer population levels

Objective or Purpose: Population change

Type of Monitoring: ■ Implementation ■ Effectiveness ❑ Validation

Method of Monitoring: Coordinated field surveys with Washington Department of Fish and Wildlife.

Unit of Measure: Numbers.

Criteria: Forest Plan direction, Standards and Guidelines

Standards: Have population estimates changed more than 20% in a 5-year period?

Frequency Item is Monitored: Every 5 years

Evaluation: No population estimates have been made since 1986. Trend counts are conducted annually to estimate herd composition. Trend counts indicate an increasing population (based on the number of fawns surviving the winter), but it is difficult to measure total population change based on these indices. The results of the trend counts for 2010 were: spring 40 fawns/100 adults; fall (post hunting season) 24males/100 females (approximately 45% of the males were classified as adult), and 82 fawns/100 adult females.

Recommended Actions: No action needed.

Monitoring Item No. 11

Primary Cavity Excavators

Objective or Purpose: Habitat Management

Type of Monitoring: ■ Implementation ■ Effectiveness ❑ Validation

Method of Monitoring: Estimate numbers of snags and wildlife trees by sampling timber management projects and established transects

Criteria: Forest Plan direction, Standards and Guidelines

Standards: Does greater than 10% of the area have less than 90% of prescribed level of snags?

Frequency Item is Monitored: Every 5 Years

Evaluation: All vegetation management projects include prescriptions that retain all large dead trees that are not safety hazards and all large, old trees for recruitment as snags. No monitoring was completed in 2010 to quantify snags.

Recommended Action: Establish monitoring for ongoing vegetation management projects.

Monitoring Item No. 14

Lynx

Objective or Purpose: Habitat Management

Type of Monitoring: ■ Implementation ■ Effectiveness ❑ Validation

Method of Monitoring: Estimate amount of lodgepole pine providing lynx and snowshoe hare habitat in primary lynx area. Use Landsat imagery and aerial photos with field sampling as imagery data or photos are updated.

Unit of Measure: Percent sapling and pole condition providing habitat.

Criteria: Forest Plan direction, Standards and Guidelines

Standards: Are the amounts less than 10% predicted in the Forest Plan?

Frequency Item is Monitored: Every 5 years

Evaluation: The Lynx Conservation Assessment and Strategy (LCAS) was completed in 2000 and included recommendations for lynx conservation based on the most current science available. The Forest Service and US Fish and Wildlife Service signed a Conservation Agreement (CA) in February 2000, revised and amended in May 2005 and July 2006, to be effective until forest plans can be amended or revised to incorporate information in the LCAS. The LCAS contains similar recommendations as were contained in the Okanogan Forest Plan, e.g. restricting to 30% the amount of lynx habitat present in an unsuitable condition. The LCAS also provided information on lynx habitat and direction from the Regional Office provided guidance on identifying lynx habitat. Although monitoring item 14 only applies to MA12, lynx habitat is much more widespread on the Okanogan Forest and the CA applies to all lynx habitat.

Recommended Action: Drop the monitoring item since it only applies to portion of lynx habitat in MA 12. The LCAS and CA address lynx habitat management more thoroughly until the Forest Plan revision is completed and information from the LCAS in incorporated into the Forest Plan. The LCAS is in the revision process. A contract to update the assessment with all peer-reviewed literature published since 2000 was initiated in late 2010 and expected to be completed in 2011. In 2011/12 the conservation strategy will be revised to update conservation issues using the most current science.

Monitoring Item No. 15

Lynx Population Trends

Objective of Monitoring: Population trends

Type of Monitoring: ❑ Implementation ■ Effectiveness ❑ Validation

Method of Monitoring: Establish transects to measure snowshoe hare densities. Monitor snow track routes to determine lynx presence.

Unit of Measure: Estimated numbers of hares/acre and lynx tracks per survey route

Criteria: Forest Plan direction, Standards and Guidelines

Standards: Trend 20% less than predicted.

Frequency Item is Monitored: Every Year

Frequency Item is Reported: Every 5 Years

Evaluation: A cooperative research project with Washington Department of Fish and Wildlife, WA Department of Natural Resources, US Fish and Wildlife Service, Bureau of Land Management, University of Washington, Washington State University, Seattle City Light was initiated in 2006 to investigate habitat use by lynx following several large fires in the Okanogan "Meadows" and the naturally fragmented landscape in Blackpine Basin. From January 2007 through December 2010 11 males and 1 female lynx were captured and marked and 9,511 GPS coordinates were obtained from these animals. These are the result of 250 trap nights during 2007 to capture two male lynx, 1030 trap nights during 2008 to capture four male lynx, 1649 trap nights during 2009 to capture two male lynx, and 1652 traps nights to capture three males and one female in 2010. During the summer of 2010, a subsample of the GPS coordinates were measured to determine vegetation components and an additional random sample of points were measured as well. Additionally, a monitoring protocol is proposed to monitor lynx populations range-wide. The Lynx and Wolverine Steering Committee is reviewing the protocol and is searching for funding to implement it.

Recommended Actions: Continue monitoring in cooperation with various partners. Trapping in Blackpine Basin will begin in 2011 and continue through 2012.

Monitoring Item No. 16

Ruffed Grouse Habitat Management

Objective of Monitoring: Habitat management

Type of Monitoring: ■ Implementation ❑ Effectiveness ❑ Validation

Method of Monitoring: Estimate acreage of aspen in timber management areas compared with existing amounts

Unit of Measure: Acres

Criteria: Forest Plan direction, Standards and Guidelines

Standards: Representation of aspen, which is less than expected in management strategies.

Frequency Item is Monitored: Every Year

Frequency Item is Reported: Every 5 Years

Evaluation: No monitoring has occurred since the last monitoring report. However, aspen enhancement on +/-10 was completed on the Tonasket RD

Recommended Actions: Continue to monitor aspen occurrence and distribution in timber management allocations to detect changes.

Monitoring Item No. 17

Ruffed Grouse Population Changes

Monitoring Objective: Population changes

Type of Monitoring: ❑ Implementation ■ Effectiveness ❑ Validation

Method of Monitoring: Estimate relative abundance from field observations and Washington Department of Fish and Wildlife surveys and hunter information annually.

Unit of Measure: Numbers

Criteria: Forest Plan direction, Standards and Guidelines

Standards: Population trends 20% less than predicted

Frequency Item is Monitored: Every Year

Frequency Item is Reported: Every 10 Years

Evaluation: Information has not been gathered on a schedule or in a manner consistent enough or widespread enough to estimate population trends.

Recommended Actions: Drop this monitoring item.

Monitoring Item No. 19

Grizzly Bear Habitat Management

Objective or Purpose: Habitat Management

Type of Monitoring: ❑ Implementation ■ Effectiveness ❑ Validation

Method of Monitoring: Review National Environmental Policy Act (NEPA) documents for adherence to guidelines. Field verify implementation of guidelines.

Unit of Measure: N/A

Criteria: Forest Plan direction, Standards and Guidelines, Interim Forest Direction (1997)

Standards: Are Biological Assessments (BA) completed and Grizzly Bear guidelines followed?

Frequency Item is Monitored: Every Year

Frequency Item is Reported: Every Year

Evaluation: Biological Assessments are prepared and consultation completed for all proposed projects in the grizzly bear recovery area and linkage areas. Interim direction issued in 1997 restricts projects to "no net loss of core area". Forest Plan revision will incorporate additional guidance across the Forest in the Recovery Zone. In 2010 the initial year of a proposed 3-year survey was completed on the Okanogan Wenatchee National Forest and the North Cascade National Park to detect grizzly bears. Results for the initial year were 191 corrals set (each for approximately 4 weeks) and 4,491 trap night and 1,196 hairs collected. 47 cameras were set on a subsample of those corrals, for 1,084 camera nights. 6,710 photos were reviewed. No grizzly bears were detected, but 218 individual black bears were identified in DNA analysis. Funding has been approved to continue the survey in 2011.

Recommended Actions: Continue to complete Biological Assessments and consultation. Continue to work with the North Cascades Grizzly Bear Management Subcommittee to refine guidance addressing grizzly bear habitat issues and habitat.

Monitoring Item No. 20

Bighorn Sheep

Monitoring Objective: Habitat management

Type of Monitoring: ■ Implementation ❑ Effectiveness ❑ Validation

Method of Monitoring: Use Geographic Information System with field verification to assess amount and distribution of cover.

Unit of Measure: Habitat effectiveness

Criteria: Forest Plan direction, Standards and Guidelines

Standards: Management area is more than 20% below the objective

Frequency Item is Monitored: Every 5 Years

Frequency Item is Reported: Every 5 Years

Evaluation: No monitoring has been completed to assess the amount and distribution of cover. No projects were completed that affected bighorn sheep habitat.

Recommended Actions: Reliable, consistent GIS based information on current vegetation is needed to be able to provide more conclusive analysis of habitat conditions.

Monitoring Item No. 22

Mountain Goat

Monitoring Objective: Habitat Capability

Type of Monitoring: ■ Implementation ❑ Effectiveness ❑ Validation

Method of Monitoring: Assess cover and forage in mountain goat habitat

Unit of Measure: Amount, condition and quality of habitat

Criteria: Forest Plan direction, Standards and Guidelines

Standards: Downward trends which are not consistent with the goal of the management strategy

Frequency Item is Monitored: Every 5 Year

Frequency Item is Reported: Every 2 Years

Evaluation: Habitat conditions for mountain goats have not been evaluated. The Needles Fire burned through some mountain goat habitat in 2003, but no large fires have occurred in goat habitat since then. The result was likely favorable to goat habitat through rejuvenation of shrubs.

Recommended Actions: Continue to monitor habitat capability for mountain goats.

Monitoring Item No. 25

Northern Spotted Owl

Objective or Purpose: Habitat Capability and Population Changes

Type of Monitoring: ❑ Implementation ■ Effectiveness ■ Validation

Method of Monitoring: GIS with field verification to assess suitable habitat. Follow Regional protocol for population monitoring.

Unit of Measure: Habitat capability and occupancy

Criteria: Forest Plan direction, Standards and Guidelines

Standards: Is Northern Spotted Owl suited habitat between 92,115 and 112,585 acres?

Frequency Item is Monitored: Every Year

Frequency Item is Reported: Every Year

Evaluation: Habitat capability has not changed. Each project proposal is assessed to determine the effects on spotted owls and spotted owl critical habitat, a biological assessment is prepared to document and support the effects determination and consultation with the US Fish and Wildlife Service to address effects. All known nests are within Late-successional Reserves or wilderness. Site specific surveys for project evaluation have been completed.

Recommended Actions: Continue monitoring with partners.

Monitoring Item No. 26 and No. 27

Pileated Woodpecker, Pine Marten, Three-toed Woodpecker, Barred Owl

Objective or Purpose: Habitat management

Type of Monitoring: ■ Implementation ❑ Effectiveness ❑ Validation

Method of Monitoring: GIS with field verification to assess amount and distribution of suitable habitat.

Unit of Measure: Number of habitat acres

Criteria: Forest Plan direction, Standards and Guidelines

Standards: Are Management Requirements (MR) sites being maintained as described in the Forest Plan?

Frequency Item is Monitored: Every Year

Frequency Item is Reported: Every 5 Year

Evaluation: Management Requirements areas are included in evaluation addressing proposed activities under the National Environmental Policy Act. The description of habitat conditions and best-suited habitat within the distributional guidelines are selected for this monitoring item.

Recommended Actions: No action needed. Monitoring indicates management direction is being achieved. Results and effects meet the standards prescribed.

Monitoring Item No. 29

Raptor Nests

Objective or Purpose: Habitat management

Type of Monitoring: ■ Implementation ■ Effectiveness ❑ Validation

Method of Monitoring: Field reviews of identified nest sites

Unit of Measure: Habitat

Criteria: Forest Plan direction, Standards and Guidelines

Standards: Does not meet Standards and Guidelines for habitat identification and effects of projects

Frequency Item is Monitored: Every Year

Frequency Item is Reported: Every 5 Years

Evaluation: Surveys for great gray owls were conducted following protocol in conjunction with the Buckhorn Mine and several other projects. Goshawk nest territory monitoring occurs on an annual basis on a subsample (20 territories) of sites; two sites were occupied. Two peregrine falcon nests were monitored and both were occupied and produced young.

Recommended Actions: Continue with monitoring biological evaluations.

Monitoring Item No. 31

Status of Aquatic Management Indicator Species

Objective or Purpose: Ascertain Population Trends

Type of Monitoring: ❑ Implementation ■ Effectiveness ❑ Validation

Method of Monitoring: Obtain anadromous fish numbers from Washington State Department of Fish and Wildlife (WDFW). Obtain resident fish numbers from WDFW and Forest sampling.

Unit of Measure: Trend in numbers

Criteria: Forest Plan direction, Standards and Guidelines

Standards: Is there more than a 10% reduction in fish population over a 5-year period?

Frequency Item is Monitored: Every year

Evaluation: The Forest cooperated with the U.S. Fish and Wildlife Service (USFWS) to conduct bull trout spawning surveys. Douglas County PUD funds spring Chinook and summer Chinook and steelhead spawning surveys. Spawning reports for steelhead, and spring and summer Chinook salmon are available from Washington Department of Fish and Wildlife. The Forest also conducted fish distribution surveys in several streams. The fish distribution surveys are not intended to estimate population size, but to determine spatial distribution and relative abundances of fish species. The following reports results for surveys that the Forest participated in.

Bull Trout: The total 2010 bull trout redd count of 183 is a 6% decline from the 2001-2009 (without 2003, a year with incomplete surveys) average. There were distribution changes within the Methow subbasin. The Twisp and upper Methow watersheds had fewer redds compared to the 2001-2009 (w/o 2003) average redd counts while the Chewuch watershed had the highest count on record in 2010. Higher flows prevented a portion of the Twisp River from going subsurface as it usually does. Debris flows after fires in the Chewuch watershed have created more spawning habitat since 2005 and bull trout have responded with average redd counts more than tripling in the mainstem Chewuch reach and a with a 2.5 times increase for the entire Chewuch watershed.

Fish passage has recently been improved on several streams in the Methow River sub-basin that have habitat suitable for bull trout spawning. These streams include Little Bridge Creek, Libby Creek, South Fork Gold Creek and Rainy Creek. It is recommended that these streams be surveyed for bull trout spawning.

Methow River SubBasin Bull Trout Redd Counts

Year	01	02	03	04	05	06	07	08	09	10
Lower Methow	0	1	0	3	14	4	4	4	3	0
Twisp	76	93	86[i]	101	87	89	108	106	79	75
Chewuch	31	22	20	10	43	54	46	38	41	66
Upper Methow	47	79	21	58	71	63	73	59	53	34+
Redd Total:	154	195	127*	173	215	210	231	207	176	183
Total Miles Surveyed	39.7	30	25.9	30.5	30.1	28.3	27.5	37.1	36.6	35.7

Recommendations: Continue to monitor these populations.

Monitoring Item No. 32

Watershed Condition

Objective or Purpose: Determine if project implementation is resulting in expected condition for riparian and aquatic ecosystems

Type of Monitoring: ❑ Implementation ■ Effectiveness ❑ Validation

Method of Monitoring: McNeil Core Sampling Method for sediment conditions

Unit of Measure: Habitat capability

Criteria: Forest Plan direction, Standards and Guidelines

Standards: Does/Does not meet Standards and Guidelines for less than 20% fine sediments in spawning gravels less than 1 mm in size-

Frequency Item is Monitored: Every 5 years

Evaluation: Core sampling examines intra-gravel sediment conditions at the depth that salmonid eggs are buried during spawning. There are several methods used to evaluate streambed sediment conditions, quantitative techniques involve core sampling. The McNeil Core Sampling Method, as described by Schuett-Hames (1993), is the quantitative technique chosen to accomplish sampling goals for the Chewuch and Twisp Rivers.

Both the Okanogan-Wenatchee National Forest and the regulating agencies for the Endangered Species Act (NOAA Fisheries and the U.S. Fish and Wildlife Service) have standards for streams for amounts of fine sediments in spawning gravels. The standard for the Okanogan-National Forest is that a stream should have less than 20% fine sediments in spawning gravels less than 1 mm in size. The standard for both NOAA Fisheries and the U.S. Fish and Wildlife Service states that to be functioning appropriately a stream should have less than 12% fine sediments in spawning gravels less than 0.85 mm in size. A stream is considered at risk if it has between 12% and 17% fine sediments in spawning gravels less than 0.85 mm in size. Both regulating agencies conclude that a stream is not functioning appropriately if it has more than 17% fine sediments in spawning gravels less than 0.85 mm in size. This report will compare results from the Chewuch and Twisp Rivers to both the Okanogan-Wenatchee National Forest standards and to the standards issued by the regulating agencies.

Chewuch River

The Chewuch River drainage is characterized by highly granitic soils and is naturally high in fine sediment. The watershed provides important spawning and rearing habitat for steelhead, Chinook salmon, and bull trout, which are all listed as threatened or endangered by the Endangered Species Act. The headwaters of the Chewuch River begin deep in the Pasayten Wilderness, bordering Canada along the northern tip of the watershed. Three recent wildfires have burned with varying intensities throughout 70% of the Chewuch watershed. The Thirtymile fire burned approximately 9,324 acres in 2001. The Farewell fire perimeter included approximately 79,000 acres of the Chewuch watershed in 2003. Much of the east side of the Chewuch watershed (about 175,000 acres) was included within the perimeter of the Tripod fire of 2006. All three fires occurred above the sediment sampling reaches, so there is a good opportunity to monitor effects of fire on fine sediment in spawning substrate. The Tripod Fire also included much of the land lying to the east of all four sediment sampling sites. Landslide activity in the mid 2000s within the fire perimeter of the Thirtymile fire has added gravels and fine sediment to the Chewuch River that changed the distribution of habitat types and added spawning habitat in locations where it did not previously exist.

2010 Sediment Data Compared to Okanogan-Wenatchee Forest Plan Standards

All three reaches sampled for sediment in the Chewuch River in 2010 were below the 20% guideline in the Forest Plan. In 2010, the % fines < 1 mm in spawning gravels increased from 2009 in reaches 3 and 4: reach 3 increased from 13.73% in 2009 to 18.37% in 2010, and reach 4 increased from 12.54% in 2009 to 16.32% in 2010. Reach 1 was not surveyed in 2010 due to time constraints. In 2010, reach 2 was moved back to its original location near the Chewuch Campground at RM 17.5. The reach was moved downstream (to RM 11.2) in the 2007 sample year because the main channel had become dewatered. Landslides in the upper Chewuch were reactivated after heavy rain in June, 2009 and during the summer of 2010. It is possible that the increase in fines in 2010 is due to a pulse of sediment moving downstream after the rain events.

2010 Sediment Data Compared to NOAA Fisheries and USFWS Sediment Standards

All three sites sampled on the Chewuch River in 2010 are considered functioning at risk under NOAA Fisheries/USFWS guidelines. Data collected in 2010 show the mean percent fine sediment <0.85 mm to be greater than 14% and less than 17% for all three sampled reaches. In 2010, the % fines in spawning gravels increased from 2009 in the two reaches that were sampled in the two sample years (reaches 3 and 4). Reach 1 (RM 21.7) was not sampled in 2010 due to time constraints. In 2010, reach 2 was moved back to its original location near the Chewuch Campground at RM 17.5. The reach was moved downstream (to RM 11.2) in the 2007 sample year because the main channel had become dewatered. Landslides in the upper Chewuch were reactivated after heavy rain in June, 2009 and during the summer of 2010. It is possible that the increase in fines in 2010 is due to a pulse of sediment moving downstream after the rain events.

Fine Sediment Trends

The percent fine sediments in spawning gravels in the Chewuch River in the past three years have decreased from years 2005 to 2007, and are at about the same level as years 2000 to 2004. The decreases in % fines in spawning gravels in 2008 to 2010 could be attributed to the end of a pulse of sediment that went through the system following a sediment delivery event in 2004. In 2004, short duration, high intensity storms and subsequent landslides in the burned areas produced high flows and turbid waters. The percent of fine sediments in spawning gravels increased substantially in all four sampled reaches of the Chewuch River subsequent to the landslides and the 2006 spring run-off, which mobilized the sediment. The table and graph below shows the progression of sediment in the Chewuch; from before the landslide events (2000 to 2004), to the years affected by the event (2005 to 2007), to years 2008 to 2010, where the % fines in spawning gravels return to levels before the event.

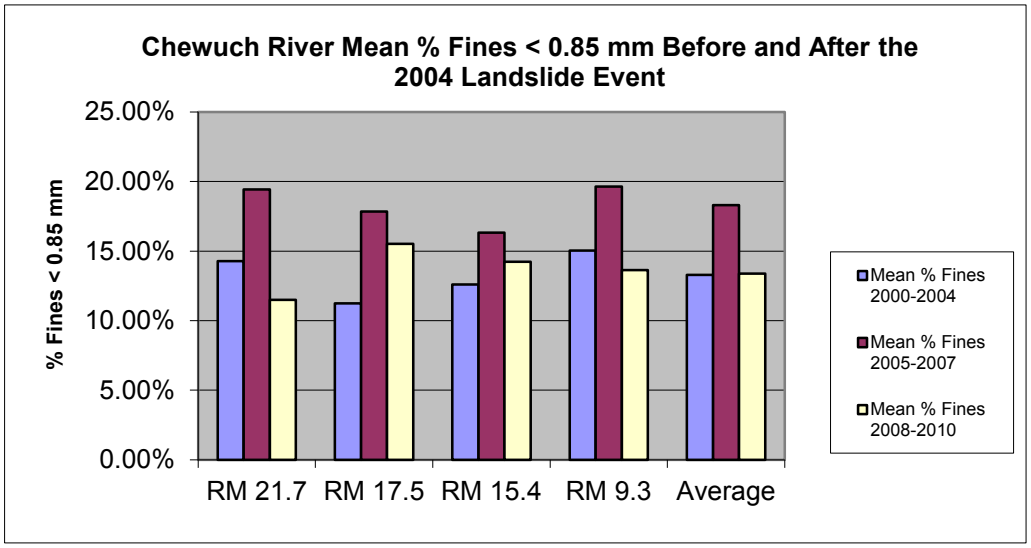
Chewuch River Mean % fines < 0.85 mm before and after the 2004 landslide event.

	1	2	3	4	5	6
Sample Reach/ River Mi.	Mean % Fines < 0.85 mm 2000 to 2004	Mean % Fines < 0.85 mm 2005 to 2007	Change in Mean % Fines (column 2 minus 1) + or -	Mean % Fines < 0.85 mm 2008 to 2010	Change in % Mean Fines (column 4 minus 2) + or -	Change in % Mean Fines (Column 4 minus 1) + or -
1 21.7	14.27%	19.42%	+ 5.15%	11.50%	- 7.92%	- 2.77%
2[1] 17.5	11.23%	17.84%[1]	+ 6.61%	15.51%	- 2.33%	+ 4.28%
3 15.4	12.59%	16.33%	+ 3.74%	14.22%	- 2.11%	+ 1.63%
2a[2] 11.2	-	10.41%[2]	-	12.10%	+ 1.69%	-
4 9.3	15.04%	19.63%	+ 4.59%	13.63%	- 6.00%	- 1.41%
Average	13.28%	18.31%	+ 5.03%	13.39%	- 4.92%	- 0.11%

[1]No sediment samples were collected in reach 2 from 2006 to 2009 because the river abandoned the main channel at the historic sample sites. A new sample site (2a) was selected in sampling years 2007-2009. The site was moved back to its original location at RM 17.5 in 2010.

[2]New sample site selected in survey years 2007-2009. There is no prior years data is available at this site. The % fines at this site has not been added to the average mean % fines for 2005 to 2007.

Chewuch River % fines < 0.85 mm before and after the 2004 landslide event.



Twisp River

The Twisp watershed provides important spawning and rearing habitat for steelhead, Chinook salmon, and bull trout, which are all listed as threatened or endangered by the Endangered Species Act. The geomorphology of the Twisp River drainage is influenced by alpine and continental glaciations and fluvial processes. The drainage is comprised of predominantly hard metamorphic rock that is resistant to weathering. The Lake Chelan-Sawtooth wilderness accounts for roughly half of the 145,000 acres managed by the Forest Service in the Twisp Watershed. Most land management activity occurs in the lower portion of the watershed in the Little Bridge and Buttermilk Creek sub-watersheds.

2010 Sediment Data Compared to Okanogan-Wenatchee Forest Plan Standards

All three reaches sampled for amounts of fine sediment < 1 mm in the Twisp River in 2010 were below the 20% guideline in the Forest Plan. Reaches 1 to 3 were sampled in both sample years; reach 4 was not sampled in 2010 due to time constraints. Overall, the amount of fine sediments < 1 mm were lower in 2010 in the three reaches that were sampled in both years, with a grand mean of 13.93% compared with a grand mean of 14.97% in 2009.

2010 Sediment Data Compared to NOAA Fisheries and USFWS Sediment Standards

In 2010, reaches 1 and 3 of the Twisp River were found to be functioning at risk for the percentage of fine sediment smaller than 0.85 mm in spawning substrate. Reach 2 was found to be functioning properly for fine sediments smaller than 0.85 mm. Reach 4 was not sampled in 2010 due to time constraints. Overall, the percent fine sediments < 0.85 mm were slightly lower in 2010 in the three reaches that were sampled in both years, with a grand mean of 12.16% compared with a grand mean of 12.48% in 2009.

Fine Sediment Trends

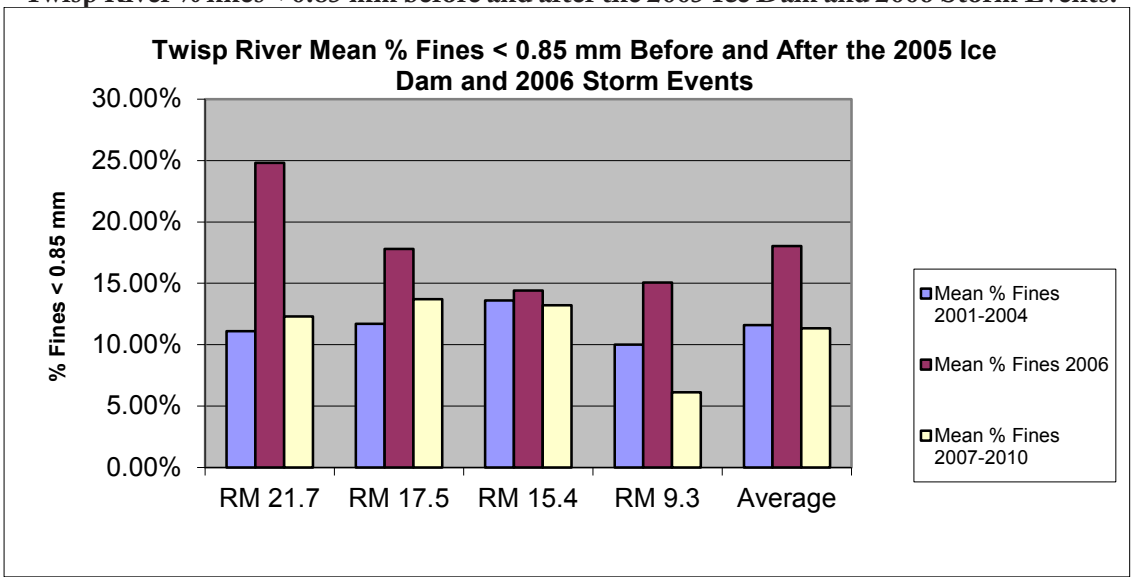
The amount of % fines in spawning gravels in the Twisp River has decreased every year since 2004 (no sampling was done in Twisp River in 2005). In 2006, the % fines in spawning gravels was significantly higher than in any other survey year (sediment sampling began in the Twisp River in 2001). The 2006 peak spring run-off was almost 80% higher than the average peak spring run-off between 2001 and 2004, and about 40% higher than the average of years 2007 to 2010. The increase in percent fines in spawning gravels may be due to the increased peak run-off in 2006, which may have scoured the banks and/or recruited sediment from the floodplain and tributaries. In addition, large amounts of sediment may have been deposited when anchor ice moved downstream during a thaw in February 2005, scouring the banks of the river. The table and graph below shows the increase in the mean % fines < 0.85 mm from survey years 2001 to 2004 (before the ice flows in February 2005 and high 2006 run-off) to survey year 2006 (after these events). Data from years 2007 to 2010 indicate that the % fine sediments in spawning gravels in Twisp River have returned to pre-2006 levels.

Twisp River Mean % fines < 0.85 mm before and after the 2005 ice flows and 2006 run-off

	1	2	3	4	5	6
Reach/ River Mi.	2001-2004 Mean % Fines < 0.85 mm	2006 Mean % Fines < 0.85 mm	Change in Mean % Fines (column 2 minus 1) + or -	2007-2010 Mean % Fines < 0.85 mm	Change in Mean % Fines (column 4 minus column 2) + or -	Change in Mean % Fines (Col. 4 minus column 1) + or -
1 0.2	11.10%	24.80%	+ 13.70%	12.29%	-12.51%	+ 1.19%
2 7.0	11.69%	17.81%	+ 6.12%	13.70%	- 4.11%	+ 2.01%
3 14.0	13.56%	14.42%	+ 0.86%	13.20%	- 1.22%	- 0.36%
4 18.0	10.00%	15.07%	+ 5.07%	6.11%[1]	- 8.96%	- 3.89%
Average	11.59%	18.02%	+ 6.43%	11.32%	- 6.70%	+ 0.27%

[1]Average of 2007-2009, reach 4 was not surveyed in 2010.

Twisp River % fines < 0.85 mm before and after the 2005 Ice Dam and 2006 Storm Events.



Note: No sediment sampling was done in Twisp River in 2005.

Temperature
The number of temperature monitoring sites in the Methow Subbasin from 1996 to 2010 is shown in the table below:

Watershed	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Upper Methow	0	0	1	0	1	0	0	10	5	8	3	3	3	6	3
Middle Methow	0	0	2	2	4	0	0	1	12	25	11	15	19	18	11
Lower Methow	4	3	2	0	0	0	0	0	0	10	3	2	2	9	14
Chewuch	0	1	2	5	4	6	19	14	15	18	14	7	18	13	18
Twisp	0	1	1	0	0	4	2	0	0	5	11	6	2	6	18
Total Sites	4	5	8	7	9	10	21	25	32	66	42	33	44	52	64

The variation in the highest annual 7 day average maximum water temperature (DAMWT) from 2000 to 2010 is shown in the table below. Stream temperatures in 2010 were the coolest on record for a majority of the monitored sites and in 2009 they were the warmest on record for a majority of sites.

The 23 sites in the table have at least five years of stream temperature data, and are ordered by the number of years of data. The 2000-2010 mean of the highest of each year's DAMWT is shown in the second column of the table. The next 11 columns show that year's deviation of the DAMWT from the grand mean. The color codes are a visible indicator of the size and direction of each year's deviation from the grand mean. For example for Boulder Ck the 2000-2010 average of each year's highest DAMWT is 19.3^0 C and in 2000 the highest 7DAMWT was $.8^0$ cooler than that grand mean. Dark green represents the lowest deviations (coolest), light green smaller negative deviations, uncolored are values around 0 and yellow and pink represent increasingly higher positive departures (warmer) from average. The average deviation of all the sites within a year is shown in the line below the last site.

The table shows the contrast between 2009 and 2010 in the DAMWT at each site. In 2009, 11 out of 20 sites had their record warmest DAMWT, while it was the second highest for 4 sites and third highest for 3 more, accounting for a total of 18 of the sites. Just the opposite situation occurred in 2010 with 13 sites having their record coolest DAMWT, 4 had their second coolest and for one site it was the third coolest. On the ground there were no biophysical changes along the steam network at or upstream from the sites. So what caused the record variations?

Annual highest 7 day average maximum water temperatures for 23 sites in the Methow Subbasin

Temperature Site	2000-2010 Mean 7 Day Average Max Water Temp	Deviation of Annual 7 Day Average Max Water Temp from Grand Mean (Deg. C)										
	Degrees C	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Boulder Creek RM 0.5	19.3	-0.8		0.9	1.7	-0.7	-0.3	0.3	0.2	-0.7	1.0	-1.4
Chewuch River Mouth	20.6	0.0	1.1	-0.8	1.3		0.7	0.5	-0.8	-0.4		-1.6
Lost River RM 0.5	13.9	-0.3			0.2		0.5	0.2	-0.2	-0.1	0.2	-0.4
Wolf Creek Mouth	19.0	-1.3			0.5		0.9	2.6	-0.5	-0.5	0.2	-2.2
Beaver Cr RM 0.3 - Highway 153	21.5					1.7	0.8	1.2	-0.7	-1.7	1.7	-3.3
Chewuch River RM 5.4 (Baldy's)	19.5		0.0	-0.7		0.3	1.0			-0.5	1.2	-1.5
Chewuch at RM 18.2 (above Doe)	20.0	-0.4	-0.1	-0.8		0.4	0.5			-0.3	0.7	
Chewuch RM 34 (end of road)	17.8				0.3	-0.1	0.4		-0.3	0.3	0.0	-0.8
Eightmile Creek RM 0.3 diversion	11.3					0.1	0.6	0.5	-0.1	-0.5	0.3	-0.6
Lake Creek RM 0.4	18.4			-2.3	-0.8	0.7		1.0	0.1	0.0	1.5	
Twisp River RM 1.8 (USGS gage)	20.1		1.7				2.6	-0.2	-1.3	-0.5	0.1	-2.1
W. F Methow RM 1.8 (abv Robins)	16.6				-1.1	0.7	0.8			-0.8	0.8	-0.6
Early Winters Creek Mouth	15.5						0.9	0.2	-0.9	-0.1	0.7	-1.0
S. Fork Beaver Cr. RM 0.3	14.9					0.9		0.2	0.2	-0.9	0.8	-1.5
Libby Creek Mouth	17.0						0.2	0.1	-1.2	0.2	1.7	-0.9
Chewuch RM 24.8 (above Lake C	18.5			-1.4	0.5	0.1	0.2			1.3		-0.6
Andrews Creek RM 0.2	16.8			-2.9			0.0		0.5	0.7	1.8	0.1
W. F. Methow RM 0.8 (abv Lost R)	17.2				-0.5	0.9	1.0	-0.2	-1.1			
Beaver Cr RM 9.4-above S. Fork	15.2					0.9			0.2	-0.6	0.5	-1.1
Blue Buck Creek Mouth	14.5					-3.2			0.7	0.7	1.5	0.3
Gold Creek RM 0.5 (0.1 2010)	17.8							0.8	-1.5	0.2	1.8	-1.3
Twentymile Cr Mouth	18.7			1.0					-1.1	-0.2	1.1	-0.8
Little Bridge Creek Mouth	16.7						0.6	0.9		-1.0	0.7	-1.4
Average Deviation for All Sites		-0.6	0.7	-0.9	0.2	0.2	0.7	0.6	-0.4	-0.2	0.9	-1.1
# Sites Cooler than site avg		4	1	6	3	3	2	2	12	16	0	18
# Sites Warmer than site avg		0	3	2	6	10	15	12	6	6	20	2
# Warmer by .5		0	2	2	3	6	10	5	1	3	15	0
# Cooler than -.5		2	0	6	3	2	0	0	8	8	0	3
Air Temp Depatures (Jul,Aug)		-,-	-,+	+,0	++,+	++,+	+,++	+++,+	+++,--	+,-	+++,++	+,--
Flow Departures (Jul, Aug)		-,-	--,--	-,-	--,--	-,++	--,--	-,-	-,-	-,0	--,-	++,+
Prediction using both months		cool	warm	warm	hot	warm	hot	hot	hot	warm	hot	warm
Prediction using August only		cool	warm	0	warm	warm	hot	warm	cool	cool	hot	cold

There are two environmental factors that vary year to year and have a large impact on maximum stream temperatures: Low flow water volume (baseflow) and air temperature. Variation in those parameters is shown in the tables below.

Daily high air temperatures for the Wenatchee airport summarized for each July and August from 2000-2010.

The climatic normals are for the period 1971-2000. Colors have basically the same meaning as in the table above.

Mon/Yr	Avg Max	Avg Max Dep	# Days Max Temp 5-10° Higher From Average For That Day	# Days >=10° Higher From Average For That Day	# Days >90°	# Days >90° Normal	# Days >90° Dep
Jul-00	85.6	-1.1	4	2	10	12.4	-2.4
Aug-00	84.8	-1.3	8	0	11	11.5	-0.5
Jul-01	86.1	-0.6	6	4	11	12.4	-1.4
Aug-01	87.7	1.6	11	5	14	11.5	2.5
Jul-02	89.0	2.3	11	5	15	12.4	2.6
Aug-02	85.8	-0.3	6	3	8	11.5	-3.5
Jul-03	91.2	4.5	14	9	18	12.4	5.6
Aug-03	87.6	1.5	6	2	10	11.5	-1.5
Jul-04	89.5	2.8	12	5	17	12.4	4.6
Aug-04	87.5	1.4	14	6	16	11.5	4.5
Jul-05	88.0	1.3	9	3	14	12.4	1.6
Aug-05	89.0	2.9	13	3	16	11.5	4.5
Jul-06	91.3	4.5	15	11	18	12.4	5.6
Aug-06	87.5	1.4	7	4	11	11.5	-0.5
Jul-07	91.5	4.7	15	8	20	12.4	7.6
Aug-07	84.5	-1.6	6	2	6	11.5	-5.5
Jul-08	88.1	1.4	8	3	11	12.4	-1.4
Aug-08	84.7	-1.4	8	4	10	11.5	-1.5
Jul-09	91.6	4.9	16	10	22	12.4	9.6
Aug-09	88.3	2.2	13	7	12	11.5	0.5
Jul-10	87.6	0.9	10	2	18	12.4	5.6
Aug-10	84.5	-1.5	7	1	12	11.5	0.5

In general the daily maximum air temperature in the decade 2000-2010 was warmer than during the normal period of 1971-2000. The average monthly high temperature was 1.7 degrees warmer than normal and on average there were 1.7 more days per month with high temperatures >= 90 ^{0}F. However, the daily maximum air temperatures at the Wenatchee airport were cool in 2010 with August's average daily maximum 1.5 degrees cooler than normal. On the other hand 2009 was warmer than normal with July's average daily maximum air temp 5 degrees warmer than normal. 2007, 2006, and 2003 all were warm years with a 5 degree increase in mean daily high temperatures in July in each year. 2008 and 2000 were cool years. During the decade July was much more likely than August to have higher max air temperatures than normal.

Summer baseflows are another component of stream temperatures that varies from year to year. Baseflow is in turn dependant on how much snow fell in the mountains over the winter and then the rate at which it melted over the spring/summer. The Chewuch River's annual and July/August flow departures from average conditions over the period 1992-2010 are shown in the table below. The record is broken into 2 periods, the 1995-1999 period of above average summer flow conditions and the period from 2000-2009 when summer flows were all below average. 2010 stands out as the first year in the last 11 years

where summer flows were above average. The lowest flows during this period are in 2001. The below average summer flows and the higher than average maximum air temperatures have an amplified effect on maximum stream temperatures during July and August.

Chewuch River Annual and July/August Mean Flow Departures from Average over the period 1992-2010. Units are cubic feet per second (cfs). Pink indicates a negative deviation from average flows (lower flows), and green indicates a positive deviation from 1992-2010 average.

Avg. Annual Flow 4,727 Cfs		Avg. Monthly Flow 449 Cfs		Avg. Monthly Flow 143 Cfs	
Year	Annual	July	July	Aug.	Aug.
	Departure (cfs)	Departure (cfs)	Proportion Dep from Mean	Departure (cfs)	Proportion Dep from Mean
1992	-2,070	-67	-0.15	-11	-0.08
1993	-1,372	31	0.07	202	1.41
1994	-1,435	-269	-0.60	-95	-0.67
1995	1,745	75	0.17	-2	-0.02
1996	1,613	464	1.03	39	0.27
1997	2,363	169	0.38	31	0.21
1998	1,198	95	0.21	14	0.10
1999	3,044	965	2.15	206	1.44
2000	-999	-114	-0.25	-58	-0.41
2001	-3,522	-334	-0.74	-103	-0.72
2002	-952	-121	-0.27	-67	-0.47
2003	-1,329	-262	-0.58	-85	-0.59
2004	-467	-61	-0.14	66	0.46
2005	-1,919	-221	-0.49	-80	-0.56
2006	2,077	-82	-0.18	-35	-0.24
2007	786	-167	-0.37	-20	-0.14
2008	520	-103	-0.23	-6	-0.04
2009	-1,243	-231	-0.51	-25	-0.17
2010	2,084	225	0.50	22	0.16

If maximum air temperatures are high then maximum stream temperatures will be high as well. The lower the streamflow, the more impact the high air temperatures will have on stream temperatures. Likewise if maximum air temperatures are cool then maximum stream temperatures will be cool and with high flows muting the size of the air temperature effect. So how well can you use monthly air temperature values from an airport many miles away and baseflow for one river in the subbasin to estimate the size and direction of the DAMWT deviations for the 23 temperature sites? In the water temperature table above, the last 2 lines represent predictions of these deviations. The 2 lines above those summarize the air temperature and baseflow deviations for July and August. In each cell the comma separates conditions for the 2 months. A minus sign indicates a below average condition (cooler or less flow) and the number of symbols shows the size of the effect. A zero represents average conditions. For the predictions using

both months, the month with the most extreme conditions was used. The predicted DAMWT is higher when the air temperatures are warmer and the stream flows are lower for a year. Cool air temperatures and high flows would have predicted a cooler than average DAMWT. For example: 2002 had warm then average maximum air temperatures combined with below average flows in both months. The both month prediction would have used July's higher air temperatures and predicted warm stream temperatures. August's prediction would be for average stream temperatures based on average air temps. In this case both predictions are off since the year had the 2nd coolest stream temps. This was the only misprediction for August, but there were 3 more mispredictions for the both-month model. The both-month model missed when air/flow conditions were different between July and August and the more extreme situation occurred in July, as in 2007. So the August model was essentially correct 10 out of 11 times. High stream temperatures are more sensitive to conditions in August and even air temperatures some distance were useful. Global climate change has the potential to seriously alter water temperatures on the Forest and consequently impact cold-water-adapted aquatic life.

Stream Surveys

In 2010, a total of 22 miles of stream were surveyed to evaluate stream channel and riparian conditions. Overall results of the surveys indicated that the condition of almost all of the reaches had improved compared to previous surveys and were meeting Forest Plan Standards and Guidelines.

Recommendations

These parameters can have large year to year variation making any estimation of trend in condition extremely difficult.

Continue to monitor sediment, stream temperature and stream and riparian conditions.

Monitoring Item No. 36

Range Heath

Objective or Purpose: Determine condition and trend and compliance with Standards and Guidelines on utilization.

Type of Monitoring: ❑ Implementation ■ Effectiveness ❑ Validation

Method of Monitoring: Condition and trend transects, field observations, production, and/or utilization studies.

Unit of Measure: Continuing

Criteria: Forest Plan direction, Standards and Guidelines, NEPA & AMPs, Letters of Concurrence or Biological Opinions from USFWS and/or NOAA

Standards: Has there been a continued downward or static trend in problem areas and/or exceeding utilization in S&G's?

Frequency Item is Monitored: Every 5 Years

Frequency Item is Reported: Every 5 Years

Evaluation: The Okanogan National Forest currently has 17 active allotments. The decline of active allotments is related primarily to the decline of timber harvest and the associated grazing of forested

transitional rangeland and permittee retirements. There are 4 vacant and 3 closed allotments that should be evaluated for closure during Forest Plan revision. These inactive allotments no longer provide adequate forage and they would not meet current management goals if grazed by permitted livestock.

Most of the suitable rangeland on the Okanogan National Forest is woodland with some small meadows, grassland, and riparian areas. Suitable range is defined as "range accessible to livestock and which can be grazed on a sustained yield basis without damage to the resource". Woodland rangelands on the Forest have been going through a fair amount of successional change that in turn, results in less forage.

The results of the last few years of range utilization effectiveness monitoring indicate that the amount of available forage on the Okanogan National Forest has been slowly declining. This decline in available forage has been validated by field reviews, watershed analysis, and NEPA assessments. Some of the major reasons for this decline are as follows:

Reduction of timber harvest activities providing transitory forage.

Successional recovery of areas where timber was previously harvested.

Successional recovery of historic fire areas.

Forest encroachment into meadows and grasslands.

Increased crown closure of woodland range sites.

Rangeland health on the Okanogan National Forest has continued to improve through a focus on range administration. Range program personnel work with the permittees to administer the allotments according to the Forest Plan Standards and Guidelines, as well as the Northwest Forest Plan, PACFISH, and INFISH Standards and Guidelines. These Standards and Guidelines are incorporated into the Term Grazing Permits, discussions at annual operating instruction meetings and in the AOIs, Allotment Management Plan development from the NEPA Decision, and allotment field inspections.

The focus on administration of the range resource has resulted in a stable trend in most cases, and in some cases an upward trend of improved range health. Non-compliance issuances have been rare, and those that have been issued have been remedied within the timeframes in all cases but one. No Term Grazing Permits have been suspended or cancelled because of non-compliance. Because of this administrative focus, Range program managers are observing improvements in plant vigor, plant residual after the grazing period, desirable plant composition, and overall improvements to riparian areas. Areas that do not meet allowable forage utilization standards one year, are usually not repeated at the same site the following year.

Forage utilization in uplands and floodplains, and residual stubble height measurements on hydric plants along the streamside greenline are documented in key areas. Forage production over the past five years has been quite variable over the Forest. The Forest saw an increase in nonuse of range allotments by grazing permittees due to resource protection in wildfire areas, lower forage production and limited water availability in some years of drought, and waiver of Term Grazing Permits with either no preferred applicants to fill the allotment or vacating an allotment because of predators or other resource issues.

Information and data collection concerning the rangeland and riparian areas has continued to increase over the past five years. Due to fisheries consultation requirements, allotments which are situated within the Northwest Forest Plan, INFISH or PACFISH areas are monitored with district fisheries biologist assistance.

During the past five years, condition and trend long-term monitoring sites have been reread on a schedule consistent with the Rescission Act for renewal of Range NEPA Allotment Management Plans. Many of

these monitoring areas were originally established in the 1950's and 60's. Most of the rangeland condition and trends are maintaining or improving on the Forest. The Forest recognizes that there are rangeland and riparian areas that need improvement. An emphasis on rangeland analysis and administration is expected to continue in the upcoming years. Rangeland health is expected to continue to improve.

Recommended Actions:

Continue to implement utilization monitoring for the active grazing allotments.

Continue to adjust grazing strategies to reduce grazing effects on other resources. Changes or modifications to attain Forest Plan objective are made through Term Grazing Permit administration for compliance with utilization standards and guidelines. Where currents actions are not obtaining desired results, make changes through adaptive management.

Continue to complete range analysis surveys for NEPA decisions and allotment management plan updates.

Monitoring Item No. 37

Allotment Management Plans

Objective or Purpose: Ensure Management Plans are Developed and Implemented, and Plans incorporate Standards and Guidelines, including Riparian Objectives

Type of Monitoring: ■ Implementation ❑ Effectiveness ❑ Validation

Method of Monitoring: Review allotment NEPA and allotment management plans

Unit of Measure: Range allotment NEPA decisions completed

Criteria: Forest Plan direction, Standards and Guidelines, Riparian Objectives

Standards: Has the Forest prepared an average of six allotment management plans per year? Are riparian objectives identified in the AMPs?

Frequency Item is Monitored: Every Year

Frequency Item is Reported: Every Year

Evaluation: Allotment Management Plans that included Standards and Guidelines, including riparian objectives, were completed for the Okanogan National Forest in 2006 Tiffany C&H, Ramsey C&H, East Chewack C&H, Beth C&H, Bodie C&H, Cumberland C&H, Strawberry C&H; 2007 Beaver C&H, Frazer C&H, Finley C&H, Bensen C&H, Buck C&H, Texas C&H, Big Canyon C&H, Funk C&H, Mutton Creek C&H; 2008 Ramsey C&H, Annie C&H, Fir C&H, Ogle C&H, Frosty C&H, Cobey C&H; 2009 Dugout C&H, Bailey C&H, Richwood C&H, Sun Ranch on/off C&H, Cub C&H; 2010 - none. As directed by the Regional Office, Forest Plan Standards and Guidelines, including riparian objectives are included in all Term Grazing Permits until NEPA can be completed and AMPs updated. Funding is the biggest challenge for the range analysis to be completed the first year and the environmental document to be written the second year after the analysis is complete. Good progress has been made on preparing range allotment NEPA decisions.

Recommended Actions: Continue the current actions. Where currents actions are not obtaining desired results, make changes through adaptive management.

Monitoring Item No. 47

Riparian Watershed Implementation Monitoring

Objective or Purpose: Document implementation and effectiveness of Best Management Practices or other projects

Type of Monitoring: ■ Implementation ❑ Effectiveness ❑ Validation

Method of Monitoring: Interdisciplinary EA and project implementation review.

Unit of Measure: Each

Criteria: Forest Plan direction, Standards and Guidelines

Standards: Any failure to meet planned objectives

Frequency Item is Monitored: Variable, as projects are implemented

Evaluation: In order to comply with section 7 of the Endangered Species Act, the United States Forest Service is required to follow the terms and conditions set forth in Biological Opinions issued by NOAA Fisheries and the USFWS in three special use permits for irrigation diversions located on the Methow Valley Ranger District. The diversions are located in Wolf Creek, Early Winters Creek, and the Chewuch River. Under the terms and conditions of each Biological Opinion, the USFS is to require that each permittee monitor instream flows and delay or cease diversions when specified instream "target" low flows occur. The ditch permittees are required to notify the USFS when instream flows drop to certain levels. This ensures they are ramping down flows at the headgate to allow fish rearing in the ditch, upstream of the fish screen, to migrate back to the stream. The USFS is required to monitor the date and flow at which the irrigation diversions are turned on and when flows are reduced or discontinued for the season and report whether or not the target flows set forth in the Biological Opinions were exceeded and for how long. These records are to be forwarded to NOAA Fisheries and to the USFWS at the end of each irrigation season. The 2010 monitoring showed that the conditions of the permit were met.

Restoration

More of the Forest restoration work involves partnering with other agencies and groups. For example the USDI Bureau of Reclamation is partnering with Forest for restoration work in the Methow subbasin as mitigation for their mainstem Columbia River dams. One mile of stream was restored through the Methow Valley Beaver Relocation Project. Nine beavers were introduced into 3 different sites within the Beaver Creek watershed, located in the Methow subbasin. These beavers remained in the areas where they were introduced and have created ponds which are helping to stem spring runoff and store water for slower release throughout the summer, capture sediment and create additional stream and riparian habitat for associated aquatic and wildlife species. Partners on this project included: Methow Conservancy, Ecotrust, Washington Department of Ecology, Washington Department of Fish and Wildlife, Yakama Nation, USDI Fish and Wildlife Service - Winthrop National Fish Hatchery.

Cobey Creek Restoration

Work continued in the Cobey Creek Drainage of the West Fork San Poil Watershed to enhance fish and wildlife habitat and to improve riparian function. In 2003, with support from many partners, a project was started in Jimmy's Meadows to move runoff water from a created channel back onto the meadow, thereby increasing the amount of water stored for slow release over the season.

Like many places in the west, the aspen in the Cobey Creek drainage is declining. Sixty percent of western aspen stands are thought to have disappeared since the mid 19th century. Reasons vary somewhat by location, but common causes are fire suppression; succession to conifers (itself a result of fire suppression); and over browsing, both by native ungulates and domestic livestock. Aspen contributes to the landscape by providing aesthetic values, erosion control, and water. In eastern Washington's dry climate, loss of water is substantial. When conifers replace aspen, there is less water available to produce undergrowth, recharge soil profiles, and increase streamflow; all important elements of fish habitat. Deer and other wildlife use aspen stands for hiding cover, summer forage and fawning habitat; and the groves are a haven for many species of songbirds and primary cavity excavators. Currently, most stands are being invaded by conifers that would not have survived a normal fire cycle. Shading by conifers has arrested clonal sprouting, and the aspen stands are maturing and dying out. Removing the conifers through fire or mechanical means stimulates sprouting, and recent surveys indicate that aspen clones still have the ability to respond. Indeed, several stands burned by wildfires this decade are thriving with hundreds of new sprouts/acre.

Downstream to previous work at Jimmy's Meadows is Snyder's Meadow where a culvert was installed to run a tributary of Cobey Creek under a road. This disruption of the natural drainage has caused downcutting, and photos show that bluegrass has displaced sedges in a lowered water table. Presently, the damage is on National Forest, but each year it extends downstream and will soon reach private land. A later phase of this will improve conditions and avoid damage to neighboring property with a redesigned installation. Once a more natural drainage pattern is established, planting willow shoots and other riparian vegetation will curtail the downcutting actions. In 2010 the fence that one encircled the meadow was rebuilt and a water trough for stock watering was installed. The sedges and other wetland plants will reestablish themselves from remnant populations, enhancing habitat for downstream fisheries and for wildlife dependent on functioning riparian systems. In addition, noxious weeds within the project area were treated using integrated weed management techniques, noxious weeds within the project area.

Students from Tonasket High School participated as they did at Jimmy's Meadows. They collected and planted willow, and established photo points and monitoring transects in the fall. They understand how riparian systems function, how a series of projects can help raise the water table in an entire watershed, and how they can bring a watershed in their own community toward sustainability. Students also gained career exposure to the natural resources field.

Ecological objectives are to:

Increase the aspen component in treated areas by 25% by 2012

Raise the water table in Snyder's Meadow by two feet by 2014 • Allow 100% passage redband trout above road 3123-200

Reduce target noxious weed populations by 80% by 2014.

The educational objectives are to:

Increase student knowledge of meadow and upland processes by 80% by 2012

Increase student knowledge about natural resource careers by 100% by 2012

Contractors cut small diameter conifers from two aspen stands and from 100 feet around the perimenter of those stands. In one area, hinge cuts were used as a way to control livestock grazing. In the other, slash was piled and burned during appropriate weather windows. A crew built a buck and pole fence along the road and the permittee reconstructed the barb wire fence to tie it in and surround the meadow. Students are monitoring, reading plots and transects at Jimmy's Meadows and setting up new ones at the aspen work and at Snyder's. Contractors have also treated noxious weeds.

As a result of this work, ecological processes within the Cobey Creek subwatershed are expected to function more sustainably. Water will be held and released more slowly throughout the season. Deer and other wildlife will find nearly 80 acres of cover and sustenance in the young aspen. Young people gained an understanding of ecological processes by watching the results of their work. This will help ensure that the habitat gains will last into future generations.

Recommendations: Results okay; continue monitoring this item.

Monitoring Item No. 53

Road Miles & Operational Status

Type of Monitoring: ■ Implementation ■ Effectiveness ❑ Validation

Method of Monitoring: Project reviews and year end reports. Continuous GIS update (as available) with field sampling and Forest Transportation Plan annually.

Unit of Measure: Open road density, based on the miles of open road in a given discrete management area.

Criteria: Forest Plan direction, Standards and Guidelines

Standards: Fails to meet plan objectives by more than ten percent annually.

Frequency Item is Monitored: Every Year

Frequency Item is Reported: Every 5 Years

Evaluation: Approximately half of the forest is allocated to Management Areas that do not have road density standards, but have prohibitions or severe restrictions on road building (e.g., wildlife, semi-primitive, wilderness and special emphasis areas). The other half is allocated to Management Areas that have a specified road density standard.

Approximately 95 percent of the acres in Management Areas with a road density standard meet the standard, a 3% improvement since 2005. Approximately 98 percent of the acres on the forest comply with Forest Plan Standards designed to have limited or no wildlife disturbance from road densities, a 2 percent improvement since 2005.

Total Forest Acres	Percent Of Acres With No Road Density Standard	Percent Of Acres With Road Density Standard	Percent Of Total Forest Acres Meeting Road Density Standard
1.7 million	52%	48%	98%

80 percent of the discrete Management Areas with road density standards currently meet the standard, a 2 percent improvement since 2005. 210 miles of road have been decommissioned since the Forest began keeping records in 1992, with over half of that being in the last 5 years. Since development of the Forest Plan, efforts have been made to inventory non-system roads that were not included in the earlier inventories. These roads are the "unclassified roads" described in the roads analysis rule. This has resulted in a higher inventoried road mileage in many Management Areas. The majority of these non-system roads existed before the Forest Plan, but had not been inventoried.

Since 1992, road lengths have decreased in 5 Management Areas that still do not currently meet meeting road density standards (not including minor increases and decreases caused by rounding). Road lengths have increased in 18 Management Areas that still do not currently meet road density standards; as noted

above these increases are likely due to discovery of open roads that were not part of the 1992 inventory. However, despite adding old roads to the inventory, overall open road miles in management areas with road density standards have decreased from 2085 miles in 1992 to 1406 miles in 2010, or about 33 percent.

Road construction on the forest continues to be low. At its highest, fifty-nine miles of road were constructed in 1990, and the low was 0.0 miles in 2000 and 2003.

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Total System Road Construction Miles	59	15.2	7	10	1.8	3.9	1.6	4.9	3.1	1.4	0
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	
Total System Road Construction Miles	0.8	0.9	0	1.9	4.2	0	1.6	0	0	0	

The forest actively began obliterating roads in 1992, removing them from the transportation system.

Miles of Road Decommissioned	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
System	4.8	8.0	0.7	3.5	0.0	2.2	12.5	2.6	0	0.0
Non-System								4.9	15	4.0
	2002	2003	2004	2005	2006	2007	2008	2009	2010	
System	3.5	3.7	0	4.7	4	0	4.8	41.6	4	
Non-System	15	12.5	0	1.7	0	0	16.3	39.6	0	

Trend: Road construction that adds to the forest transportation system is expected to remain low under current direction, and the forest expects to continue road closure and decommissioning as funding is available. The Forest Service has a roads policy that requires roads analysis at several different planning levels to determine the need for existing roads. Although roads analysis was completed on maintenance level 3, 4 and 5 roads in 2004, the Forest is currently undertaking minimum roads analysis to complete this process all roads on the Forest, including maintenance level 1 and 2 roads. MRA is expected to be completed in 2015 and will likely result in NEPA proposals to continue to approve road closures and decommissioning. These will continue the upward trend in meeting road density management direction across the Forest.

Recommended Actions: Results okay. Continue monitoring. Minimum roads analysis has begun on the Forest and be completed in 2015. MRA will result in recommendations for future road closure projects. Use best available science to determine road density standards during Plan revision.

Monitoring Item No. 55

Actual annual Wildfire occurrence frequency by statistical cause.

Objective or Purpose: Assure that Fire Management direction in the Forest Management Plan is being met.

Type of Monitoring: ■ Implementation ■ Effectiveness ❑ Validation

Method of Monitoring: Completed individual fire report for each wildfire.

Unit of Measure: Each.

Criteria: Forest Plan direction, Standards and Guidelines.

Standards: Change of +15% in total acres burned from 5 year average.

Frequency Item is Reported: Annually.

Evaluation:

	2010		5-Year AVG	
	# of Fires	Acres	# of Fires	Acres
Lightning	16	4	45	42,460
Equipment	0	0	0	0
Smoking	0	0	1	1
Campfire	3	0	6	5
Debris Burn	1	0	1	24
Incendiary	1	0	0	0
Children	0	0	0	-
Misc.	2	0	3	592

Recommendation: Results are okay, nothing can be done for natural ignitions. There is still a need to pursue investigations of human fire starts in order to determine cause. The Forest continues to have a need for qualified Fire Investigators.

Monitoring Item No. 70

Heritage Resource Site Protection

Objective or Purpose: Cultural resources that are listed, eligible or potentially eligible for the National Register of Historic Places are being protected as stated in the Forest Plan and in compliance with federal laws and regulations.

Type of Monitoring: ■ Implementation ❑ Effectiveness ❑ Validation

Method of Monitoring: Monitor a stratified sample of all unevaluated sites and of all significant sites in active project areas

Unit of Measure: Report percent unevaluated and significant sites sampled and the respective compliance with the Forest Plan.

Criteria: Forest Plan direction, Standards and Guidelines

Frequency Item is Monitored: Annually

Frequency Item is Reported: Annually

Evaluation: The Heritage Program Manager oversees and directs Section 106 and Section 110 consultations on the Forest. Restructuring of the program in late 2007 through the addition of an Assistant Forest Archaeologist allowed the Forest to meet all of its support needs. The Tonasket Ranger District hired a seasonal Archaeologist in 2009 and in 2010 the seasonal Archaeologist and a small crew of Archaeological Technicians were brought on to handle district Section 106 needs including cultural resource inventory for the large acreage Lost timber sale. Cultural resource technicians continued to do the majority of the Section 106 work on the Methow Valley Ranger District under the direction of the Heritage Program Manager and Assistant Forest Archaeologist. To keep track of cultural resources on Forest the program maintains several internal databases and in 2010 all data was entered into the Forest Service National database for heritage resources. The Forest continues to work on getting all sites into GIS and will work on a GIS layer for Section 106 inventories/surveys in 2011. Forest archaeologists have access to and often use the GIS database operated by the Washington State Department of Archaeology and Historic Preservation.

Between 2006 and 2010 the number of Section 106 consultations in accordance with the National Historic Preservation Act remained steady and averaged 35 per fiscal annum. There was a small increase in the number of projects funded by the Washington State Department of Transportation and in the number of USDA-funded projects awarded to Okanogan County agencies (i.e. Whistler Canyon Trailhead and fuels reduction projects in the Methow Valley). Cultural resource inventories for development of the Buckhorn Mine continued to be done by a third party contractor working under a special use permit issued by the Forest under the Archaeological Resources Protection Act (ARPA).

Section106 consultation in support of Forest ecosystem restoration, prescribed burning, timber and salvage sales, reissuance of grazing allotment permits, trail reconstruction, bridge installation, building improvements, disposal and/or conveyance of two administrative facilities (Twisp and Cornell Butte Lookout), outfitter guide permits, wildfire suppression and BAER for the Tatoosh and Tripod Fires, and major planning efforts associated with Forest Plan revision and Access Travel Management was the major focus of fiscal years 2006-2010. Acreage inventoried for cultural resources ranged from a low of 65 acres to a high of 6,112 acres for the Lost timber sale, Buck and Bailey restoration projects. Most Section 106 consultation was for projects less than five acres in size (i.e. toilet replacement, bridge replacement, trail reconstruction).

Well over 98 percent of the Section 106 inventories resulted in a determination of no historic properties affected/no effect because sites, if present, could be avoided. A project involving the closure of abandoned mines resulted in a determination of no adverse effect because many of the mines slated for safety improvements were historic and eligible for the National Register of Historic Places. Disposal of the Twisp Administrative Site and the Cornell Butte Lookout resulted in determinations of adverse effect because many of the buildings involved were eligible for the National Register of Historic Places. In both cases a memorandum of agreement was signed outlining appropriate mitigation developed in consultation with the State Historic Preservation Officer, Yakama Nation, Confederated Colville Tribes, and the Advisory Council on Historic Preservation. One rock art site was vandalized but the graffiti was successfully removed without damaging the pictographs. Those responsible for the damage were apprehended and paid restitution.

Cultural resource inventories over the past five year resulted in the documentation of nearly100 new sites and isolated artifacts which brought the Forest's total number of documented cultural resources to just over 300. The majority of the sites documented were historic mining properties and recreational

residences. By the end of FY 2010 all recreation residences on the Forest had been documented in support of permit reissuance. To the extent possible all sites (new or previously documented) within a project area were evaluated for nomination to the National Register of Historic Places. A total of 95 sites were evaluated between 2006 and 2010. Few of the sites documented and evaluated though were determined eligible for the National Register.

Each Section 106 consultation included a management recommendation stipulating avoidance of historic properties and unevaluated cultural resources. Monitoring was stipulated for all large projects such as timber sales and landscapes burns, for projects involving ground disturbance in high site probability areas, areas where ground visibility precluded pedestrian survey, or in cases where an undertaking occurred within or in close proximity to documented cultural resources. No site intrustions occurred per monitoring reports prepared between 2006 and 2010.

Over the five year period two of the Forest's three National Register listed sites were inspected for damage and two rock art sites were added to the list of priority heritage assets. The Forest has continued to add sites to its list of priority assets each year but does struggle to address deferred maintenance needs at some sites (i.e. Bonaparte lookout groundhouse roof replacement).

Cultural resource site protection and heritage awareness were promoted by annual refresher training for cultural resource technicians and a number of ranger district employees included heritage awareness in their own district-specific presentations and contributed articles to the Forest's Cascade Lookout newspaper. Forest Archaeologists responded to several public requests for cultural resource site information and historic photos.

Recommended Action: Continue monitoring sites inside project areas. Emphasize site evaluation, especially the evaluation of previously documented cultural resource sites.

Monitoring Item No.71

Heritage Resource Site Preservation

Objective or Purpose: Management of properties eligible for the National Register of Historic Places includes preservation, rehabilitation, and stabilization of such properties

Criteria: Forest Plan direction, Standards and Guidelines

Type of Monitoring: ■ Implementation ❑ Effectiveness ❑ Validation

Method of Monitoring: Site preservation projects

Unit of Measure: Number of listed or eligible heritage resources in need of treatment (cumulative) and number of listed or eligible heritage resources treated in the FY.

Frequency Item is Monitored: Annually

Frequency Item is Reported: Annually

Evaluation: One damaged rock art site was restored in 2008 and a historic preservation plan was completed for an administrative site.

The Okanogan National Forest has several programmatic agreements and memoranda of agreement that provide strict guidelines for managing and rehabilitating National Register listed and National Register eligible sites on the Forest. In 2006 a programmatic agreement for the management of recreational residences and organizational camps in Washington State was signed by the Regional Forester. The

agreement streamlines the Section 106 process for projects involving structural improvements to historic recreational residences. It tiers to the Secretary of the Interior's Standards for Site Restoration, Rehabilitation, and Preservation.

Inspection of National Register listed or eligible sites was emphasized annually to determine the rehabiliation and restoriation needs of individual sites. Through that process, it was determined that one of the Forest's heritage priority assets, the Bonaparte Lookout Groundhouse, was in need of a new roof. Funding for that project is still needed.

Graffiti was successully removed from a rock art site in 2008 following consultaiton with the Confederated Colville Tribes and the Yakama Nation. The same site and one other on the Forest went on to be the focus of an international rock art project that successfully obtained a date using paint pigments.

Mitigation for disposal of the Twisp Administration Site resulted in the completion of a historic properties management plan for the lower Winthrop Administrative Site. The plan provides explicit direction should restoration and rehabiliation of the administrative site's buildings be needed.

Recommended Actions: Continue to perform condition assessments on historic properties and treat sites as needed.

Monitoring Item No. Item No. 72

American Indian Relations

Objective or Purpose: The Forest is meeting its trust responsibility to American Indian Tribes

Criteria: Forest Plan direction, Standards and Guidelines

Type of Monitoring: ■ Implementation ❑ Effectiveness ❑ Validation

Method of Monitoring: Number of government-to-government consultations

Unit of Measure: Number and types of consultation with appropriate tribal representatives in the fiscal year.

Frequency Item is Monitored: Annually

Frequency Item is Reported: Annually

The Okanogan National Forest is sensitive to American Indian concerns and issues regarding reserved rights on ceded lands and interest in Forest resources in general. It recognizes that portions of the Forest are within the traditional use area of the Confederated Colville Tribes and that the tribes retain the right to hunt, fish and gather on a portion of the Tonasket Ranger District. The Forest also recognizes that the Yakama Nation retains the right to fish, hunt and gather on portions of the Methow Valley Ranger District by virtue of the 1855 Yakima Treaty. Government-to-government consultation with both Indian nations remains a critical element of the program and is conducted for virtually all undertakings. Protection of American Indian treaty and religious freedom-rights are incorporated into Forest decision-making.

Consultation with tribes that may have an interest in management activities is initiated at the earliest stage of project planning and is carried through to completion of the project. The Forest shares project information through distribution of the Forest's Schedule of Proposed Actions (SOPA), Passport in Time newsletters, and via government-to-government letters for all projects involving a decision notice or decision memo.

The number of government-to government consultations has increased each year and normally coincides with the number of Section 106 reports prepared annually. Generally, the tribes were notified via government-to-government letter which described the project in detail, the type of NEPA document prepared, and provided very specific information how the Forest would consider effects to cultural resources. Each letter sought information regarding resources of interest to the tribes including traditional cultural properties (TCPs) and further stated that Tribal Historic Preservation Officers (THPOs) or appointed staff would be contacted immediately if a prefield literature review identified a TCP or a potential TCP. Each letter stated that special arrangements would be made if and when sensitive information was provided. Every letter included an offer to meet in person to discuss the project further. For major projects like Forest Plan Revision and Access Travel Management planning, the Forest Supervisor or appointed line officer met with each tribal council and consultation is on-going.

A meeting to discuss government-to-government consultation protocol in 2002 indicated that our current process continues to work well with the Yakama Nation but there was and remains a need to establish a better protocol/process with the Colville Tribal Historic Preservation Officer (THPO). In 2005 the Tribal Historic Preservation Officer (THPO) for the Confederated Colville Tribes requested revision of the Section 106 consultation process and a meeting date was established for October 2006. The meeting was held in Spokane and it involved representatives from the Colville Tribes History and Archaeology Department, the Spokane District Archaeologist for the BLM, the BLM/FS Regional Archaeologist and Forest Archaeologists from the Okanogan-Wenatchee and Colville National Forests. An agreement was drafted after the meeting but work load and disagreement over the appropriate vehicle (PMOA vs. MOA vs. MOU) has delayed implementation of a new process.

In 2006, the Confederated Colville Tribes met with representatives from the Colville National Forest and Okanogan-Wenatchee National Forest regarding their desire for a plant gathering ordinance or agreement. Several meetings were held and a draft document was submitted to the Forest Service for review. There has been no further discussion following the untimely death of the tribe's main proponent for the agreement.

The Forest consults annually with the Yakama Nation and the Confederated Colville Tribes regarding national directives and regional policies. For the period 2006-2010, major national directives included the Special Forest Products Rule, the Farm Bill, the Tribal Forest Protection Act, and the Sacred Sites Act. In accordance with the Special Forest Products Rule, fees for some special forest products are waived for tribal members and privacy is provided for ceremonial activities. The Forest recognizes the need for a written policy/direction to insure consistency across the Forest when tribal requests for Forest products are made.

Recommendations: Results Okay; Continue monitoring.

In accordance with the Archaeological Resources Protection Act (ARPA), the Yakama Nation and the Confederated Colville Tribes were notified by the Forest Archaeologist when permits were issued to non-government contractors for cultural resource inventories or research. Permits were issued annually for cultural resource surveys associated with the Buckhorn Mine project, to the local Public Utility District for a transmission line project, and a research permit was issued for a rock art project in 2008.

Monitoring Item No. 73

Management of competing and unwanted vegetation

Objective or Purpose: Reduce the reliance on herbicides and prescribed burning

Type of Monitoring: ■ Implementation ■ Effectiveness ❑ Validation

Method of Monitoring: Review attainment reports; review program effectiveness in achieving resource goals

Unit of Measure: Percent of infested acres treated with herbicides; tons of TSP emissions per year

Criteria: Mediated Agreement Requirements

Frequency Item is Monitored: Every year

Frequency Item is Reported: Every year

Evaluation: The Okanogan National Forest has implemented a Noxious Weed Prevention and Management plan that initiates a variety of prevention practices to reduce the spread of noxious weeds. Such things as public awareness, weed-free feed requirements, and equipment cleaning are part of this prevention effort. In addition, recent changes in the invasives plant program management focus on outcome-based accomplishment. In order to receive outcome-based accomplishment for treating invasive species, the forests must now document that a minimum of 50% of those acres treated were monitored for treatment effectiveness.

Integrated Weed Management includes a variety of ways to manage weeds including:

Prevention - Take proactive approaches to manage all National Forest System lands and waters in a manner to protect native terrestrial and aquatic ecosystems from the introduction and / or establishment of invasive species.

Early Detection and Rapid Response - Inventory and survey all National Forest System lands and waters so as to quickly detect invasive species infestations and implement immediate and specific actions to eradicate those invasive species infestations before they become established and spread.

Control - Implement integrated pest management activities on all lands and waters administered as part of the National Forest System to contain and control established invasive species infestations and limit their adverse effects on native terrestrial and aquatic ecosystems.

Restoration and Rehabilitation – Pro-actively manage National Forest System lands and waters such that they are self-sustaining and resistant to the establishment of invasive species, and implement restoration, rehabilitation, and/or re-vegetation activities following invasive species treatments that will prevent or reduce the likelihood of the reoccurrence or spread of terrestrial and aquatic invasive species.

Monitoring – The Invasives Program includes the collection of data for condition and trend of invasive infestations, treatment implementation and effectiveness, and validation of prevention and treatment strategies.

Most of the acreage treated for weed control was with the judicious use of herbicides since they are effective and have a low cost. Other important tools in the weed control toolbox included manual controls, biological controls, and revegetation. Hundreds of acres were hand pulled. Mowing was sometimes used to keep weeds from producing seed. The table below displays the average acreage treated each year.

Year	Acres Treated
2006	Not available
2007	7,738
2008	4,451
2009	3,527
2010	4,041

Acres are inventoried and treated with a variety of funds. Partners include the Washington State Noxious Weed Board, Washington State Department of Agriculture, National Park Service, Okanogan County Weed Board, private land owners, WSDOT, Land Conservancy, Washington Department of Fish and Wildlife, Bonneville Power Administration, Puget Sound Electricity, and Washington State Department of Ecology.

Prevention and Treatment Standards

The Forest has implemented the Regional Programmatic EIS and ROD for Invasive Plants that amended every forest plan in the region. New prevention and treatment standards include the following measures:

Vehicle washing is required to clean all heavy equipment leaving the road prism prior to entering NFS land.

Weed free straw mulch is required for mulch and rehabilitation uses

Use of pelletized and /or certified weed free livestock feed is required on all National Forest System lands.

Grazing – requires prevention practices to be incorporated into administrative mechanisms of the Allotment Management Plans, Term Grazing Permits, and Annual Operating Instructions.

Quarries – inspect sites before use; use only gravel, fill, sand and rock that is judged to be weed free.

Roads –road blading and ditch cleaning are conducted in consultation with local weed specialists for timing activities to reduce spread of weeds.

Prioritize infestations for treatment. Develop long-term site strategy.

Use native plant species in revegetation unless conditions warrant other choices.

Use only APHIS / State approved biological controls and those without negative impacts to non-target species.

Herbicide applications are performed or supervised by a licensed applicator.

Minimize negative effects to non-target species and water quality:

Design treatments to minimize or eliminate adverse effects to Threatened & Endangered species. Use site specific project design; provide a 300-foot buffer for aerial application near campgrounds and private land; No application in municipal watersheds.

Timely public notification and signing prior to implementation of herbicide projects is required.

Recommended Actions: Evaluate use of any new standards above for plan monitoring and implementation as appropriate. Monitor effectiveness of weed free feed/straw regulations and signing that communicates the new regulations to the stock-using public. Monitor the effectiveness of weed free gravel in timber and engineering projects.

Establish key/indicator drainages/areas that can be assessed every 3 years to monitor the status of invasive plants treatments and prioritize watersheds for restoration.

FOREST PLAN AMENDMENTS

At the end of fiscal year 2010, forty-four site-specific amendments had been made to the Okanogan National Forest Land and Resource Management Plan since it was signed in 1989. All have been non-significant amendments and are listed as follows:

NO.	Date	Decision Name	Standard/ Guideline Amended	Amendment
1	5/4/90	Meyers Beetle Timber Sale	MA25-8A MA25-6A	Site-specific amendments for project area only for visual quality and cover because of insect and disease problems.
2	11/19/90	Forest Plan Amendment #2	Forestwide 17-6 MA5-8B MA5-20E MA11-20C MA12-20C MA14-20C	Changes to correct errors and to ensure consistency with other standards and guidelines.
3	12/14/90	Forest Plan Amendment #3	Forestwide 17-8	Temporary amendment to allow both roads 4330 and 4010 to be plowed and open for two weeks to allow logging of two timber sales.
4	5/16/91	Forest Plan Amendment #4	None	Clarify the intent of some of the monitoring items, and correct errors.
5	5/16/91	Lyman Timber Sale	MA5-6A MA11-6B MA14-6 MA14-6B MA26-61	Eliminates total rows for cover requirements and clarifies standards and guidelines.
6	8/6/91	Forest Plan Amendment #6	None	Updates schedule of activities in Forest Plan, Appendices A-F.
7	2/7/92	Forest Plan Amendment #7	17-6 17-8	Error in current wording results in allowing a segment of a road to be snowplowed, when intent was that the entire route remain unplowed.
8	8/3/92	Forest Plan Amendment #8	None	Updates scheduled of activities in Forest Plan, Amendment A-F.
9	9/23/92	Coyote timber Sale	MA26-6A	Site specific amendment for project area only for Snow Intercept Thermal Cover and Winter Thermal Cover to treat insects and disease and provide long-term cover.
10	2/26/93	Little Bonaparte Timber Sale	Forestwide 6-1 MA14-6A MA14-6C MA5-17C MA14-17A	Site-specific amendment for project area only to allow cover values below, and road densities above forest plan standards and guidelines. Cover values are reduced to allow treatment of severe insect and disease, and road densities are exceeded to allow management of the area to reduce post sale densities.
11	5/14/93	Dragon Timber Sale	MA26-17B	Site-specific amendment for project area only, allowing road density above forest plan standards and guidelines in discrete MA26-28, because all roads in the management area that can be closed are already closed.

NO.	Date	Decision Name	Standard/ Guideline Amended	Amendment
12	6/15/93	Lamb Butte Timber Sale	MA14-17A	Site specific amendment for project area only, allowing road density above forest plan standards and guidelines for discrete MA14-04, because all roads in the management area that can be closed are already closed. Also allows temporary amendment for additional roads to be opened during life of sale.
13	9/3/93	Forest Plan Amendment #13	MA15A-210 MA15B-21P MA15B-21Q MA15A-21U MA15B-21Z	Clarifies wilderness standards and guidelines.
14	9/6/95	Forest Plan Amendment #14		Amends Forest Plan to allow snow plowing and wheeled vehicle use of Road 52, a designated snowmobile route, during the winter of 1995-96, to facilitate quick removal of the fire-killed, deteriorating trees in the Whiteface fire area.
15	4/12/96	Forest Plan Amendment #15	MA15A-19E MA15B-19E	Decisions to declare any lightning fire in the Pasayten Wilderness a prescribed natural fire will follow the direction in the Pasayten Wilderness Prescribed Natural Fire Plan. A prescribed fire plan shall be approved prior to the use of prescribed fire in the Lake Chelan-Sawtooth Wilderness.
16	5/31/96	Cayuse Timber Sale	MA14-6A	Reduce snow intercept/thermal cover for deer in the winter range by an additional 1% to improve forest health and accelerate the growth of healthy future wildlife cover.
17	9/3/96	Doe Timber Sale and Associated Activities Forest Plan Amendment #17	MA25-17C MA17-8	Allows open road density in discrete MA25-03 to exceed Forest Plan standard and guideline MA25-17C during the sale. Portion of groomed snowmobile route along Road 5010 to be relocated to an adjacent planned trail, and approximately 2400 feet of the east half of Road 5100 beyond the sno-park may be plowed.
18	9/30/96	Shady Timber Sale	MA25-17C	Allows open road density in discrete MA25-14 to exceed the Forest Plan standard and guideline during the life of the sale.
19	2/3/97	Crown Jewel Mine and Forest Plan Amendment #19	MA27	WITHDRAWN 1/17/07. Creates a new minerals management area (MA27) with goals, objectives, standards and guidelines.
20	6/9/97	Roger Lake RNA/ Forest Plan Amendment #20	MA8	Establishes Roger Lake area as a Research Natural Area.
21	9/12/97	Long Draw Salvage Timber Sale/Forest Plan Amendment #21	PACFISH RHCA widths	WITHDRAWN. Modifies PACFISH interim RHCA widths where necessary to achieve riparian management goals and objectives. Subsequently withdrawn when decision was withdrawn.
22	9/29/97	Beaver Salvage Timber Sale/ Forest Plan Amendment #22	PACFISH RHCA widths	WITHDRAWN. Modifies PACFISH interim RHCA widths where necessary to achieve riparian management goals and objectives.

NO.	Date	Decision Name	Standard/ Guideline Amended	Amendment
23	4/3/98	Beaver Salvage Timber Sale/ Forest Plan Amendment #23	PACFISH RHCA widths	Site-specific amendment to PACFISH interim widths for life of this sale to achieve riparian management goals and objectives.
24	5/19/98	South Twentymile Timber Sale/ Forest Plan Amendment #24 Old growth amendment withdrawn	MA14-17A	Amends road density in discrete MA14-05 and restores old growth characteristics in three stands of timber; site specific to this sale only. Old growth portion of this amendment was withdrawn.
25	5/27/98	Oakley Timber Sale/Forest Plan Amendment #25	MA14-6A	Amends the Forest Plan to allow management activities to improve long-term winter thermal cover for deer.
26	9/30/98	Bailout Prescribed Fire for Natural Fuels Reduction/ Forest Amendment #26	F/W19-8 MA26-6A	Allows site specific burning of natural fuels within 128 acres of mixed conifer Forest Plan old growth located in discrete MAs 26-33 and 26-34, to move structure towards historic ranges and promote late/old structure, and to protect and to develop snow intercept thermal cover which currently does not meet standards and guidelines.
27	5/18/99	Redmill Timber Sale, Road Management and Noxious Weed Management and Forest Plan Amendment #27	MA 14-6A	Reduction in snow intercept/thermal cover in MA 14-23 to help reduce disease and move stands toward conditions that maintain deer winter cover and increase long term sustainability of deer winter range.
28	5/15/99	Chewuch RNA and Forest Plan Amendment #28	MA-8	Establishes the Chewuch Research Natural Area.
29	2/11/00	Coco Integrated Resource Projects #29	MA26-17B	Changes road density standard in MA26-31 from 1.0 miles/ square mile to 1.3 miles/square mile to allow main arterials and collectors to remain open
30	2/11/00	Prescribed Fire Projects from the Coco Integrated Resource Projects EA #30	MA19-8	Allows the use of prescribed fire in two old-growth stands to reduce natural fuels and encroachment of small trees.
31	7/18/00	TPR Stand Treatment, Road Management and Prescribed Fire #31	MA26-20J	Allows winter logging in mule deer winter range for this project only in MA26-05 to mitigate soil impacts and reduce rate of spread of noxious weeds.
32	3/3/03	Bailey Fire Restoration Project #32	MA14-17A	Allows open road density to exceed Forest Plan standard during life of project; public access controlled in most areas

NO.	Date	Decision Name	Standard/ Guideline Amended	Amendment
33	7/19/04	Upper Aeneas Integrated Resource Project #33	Regional Forester Amendment #2 relating to 21" trees	Allows for expansion of seed orchard administrative site and the removal of 21 inch trees within the expansion area to create a 300' no pollen zone adjacent to the actual seed orchard
34	7/18/05	Summit Restoration Project #34	MA5-6D, MA5-6A, MA25-6A	Allows reduction in summer thermal and hiding cover in summer range and SIT winter cover in deer summer range
35	8/2/05	Two Lakes Fuels Reduction Project #35	F/W 5-1, 17-6, 19-8; MA5-6A, MA25-6A,	Allows harvest and burning in Forest Plan old growth; allows snowplowing of Forest Road 3200050; allows reduction of SIT winter cover in deer winter range and summer cover in deer summer range
36	6/5/06	Eightmile Vegetation Management Project #36	F/W 5-1, 19-8	Allows harvest and burning in Forest plan old growth.
37	6/9/06	Mutton Integrated Resource Project #37	MA25-05	Allows open road density to exceed Forest Plan standard during life of project; public access controlled to most areas
38	1/17/07	Buckhorn #38	F/W 3-3, MA14-18B. Boundary adjustment on MA14-19	Allows exceedance of sediment standard and designates Forest Roads 3550 and 3550-125 as open during winter, and allows snowplowing. Additionally combines the remnants of MA14-19 into the adjacent management areas
39	8/11/07	Frosty Fuels Reduction Project #39	MA5-1, 19-8	Allows harvest and burning in Forest Plan old growth
40	12/15/07	Tripod Fire Salvage #40	Forestwide 17-6 Management Area S/Gs MA26-20J, MA12-17D	Allows for snowplowing and motorized use of FSRs 37 and 42 in winter, permits operations during winter in MA-26, and allows motorized use in MA12
41	8/8/08	North Flank Fuels Reduction Project #41	Forestwide 5-1, 6-1, and 19-8; Management Area S/Gs MA14-6A and 26-6A	Allow for harvest and prescribed burning in Forest Plan old-growth, permits SIT, winter and summer thermal, and winter and summer and hiding cover below Forest Plan minimums.
42	9/4/08	Finley HFRA Project	Management Area S/G MA26-20j	Allows winter logging where winter harvest is normally restricted.
43		Buckhorn Exploration	Management Area S/G MA26-17B	Allows open road density to exceed Forest Plan standard during life of project; public access controlled to most areas.
44	4/28/10	Lost Fuels Reduction	Management Areas S/G MA5-6, MA14-6C, MA25-6A, MA26-6- Management Area S/G 14-17 Forest-wide S/G 5-1	Allows for reduction in deer cover in MA-5, 4,25,and 26; permits road densities to exceed Forest Plan standards in MA 14-36 during project implementation and allows harvest and fuel treatments in project areas with Forest Plan definitions of old growth stands.

Schedule of Proposed Actions

The Forest Service published revised policies and procedures for implementing the National Environmental Policy Act (NEPA) on September 18, 1992. One major change in the revised policies and procedures is the requirement that a Schedule of Proposed Actions (SOPA) be published quarterly. The purpose of this schedule is to provide notice of proposals that may undergo environmental analysis and documentation to interested and affected agencies, organizations and individuals. All documents for which the Okanogan National Forest has developed a proposed action are listed on the quarterly schedule, and decisions made during the previous quarter are highlighted. Projects listed in the schedule disclose the following information: Name of project, description, location, when scoping will begin, status, estimated date of decision, and contact person. If you wish to view a copy of the schedule, it is available on line at:

www.fs.usda.gov/projects/okawen/landmanagement/projects

If you have any questions about the schedule call the Planning and Environment section of the Okanogan-Wenatchee National Forest at (509) 664-9306 or write to: Okanogan-Wenatchee National Forest, Environmental Affairs, 215 Melody Lane, Wenatchee, WA 98801.

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